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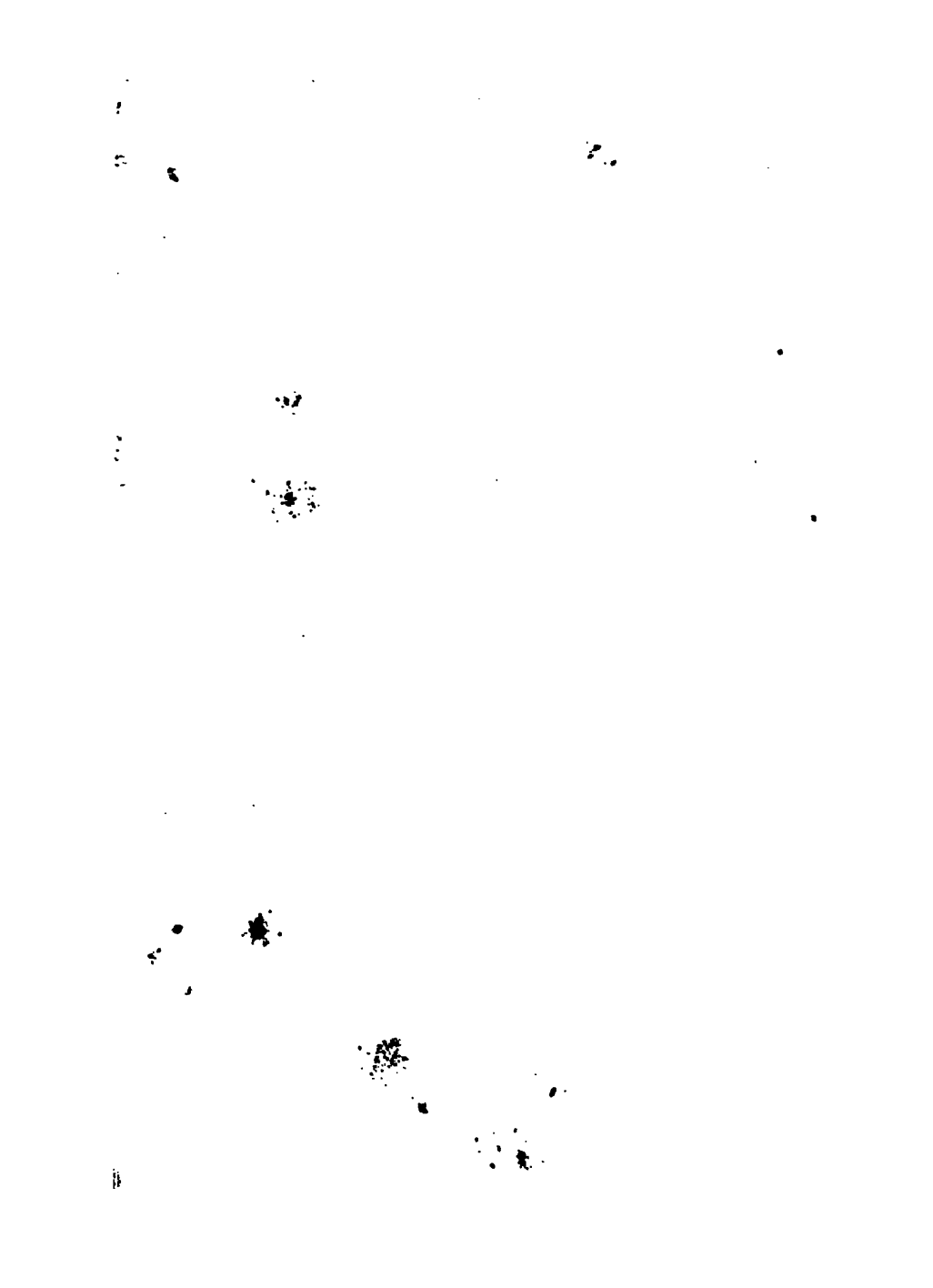
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PATENTS FOR INVENTIONS.

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ABRIDGMENTS

OF

Specifications

RELATING TO

PREPARING AND CUTTING CORK;  
BOTTLING LIQUIDS; SECURING  
AND OPENING BOTTLES, &c.

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A.D. 1777-1866.

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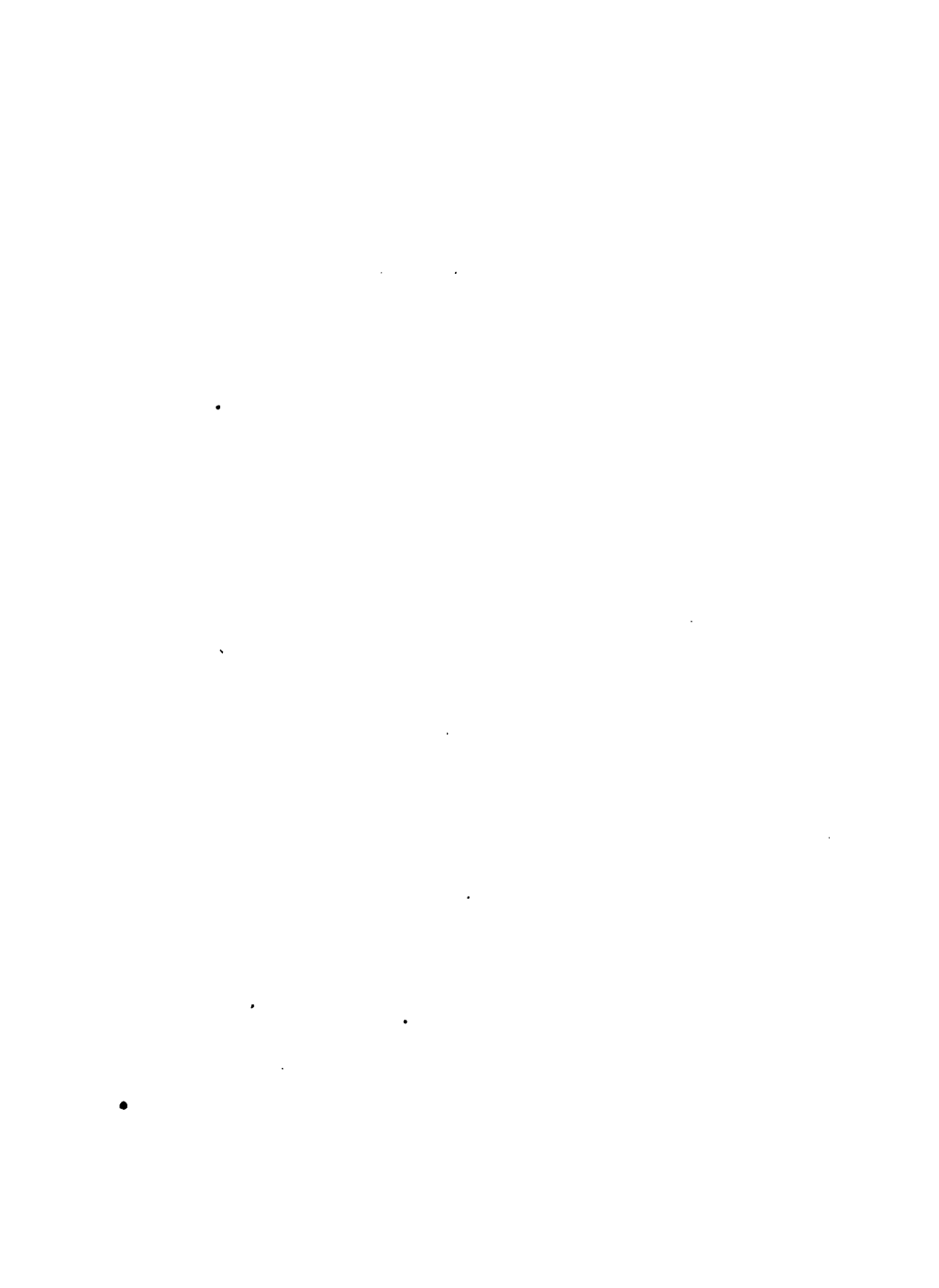
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## P R E F A C E.

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THE Indexes to Patents are now so numerous and costly as to render their purchase inconvenient to a large number of inventors and others, to whom they have become indispensable.

To obviate this difficulty, short abstracts or abridgments of the Specifications of Patents under each head of invention have been prepared for publication separately, and so arranged as to form at once a Chronological, Alphabetical, Subject-matter, and Reference Index to the class to which they relate. As these publications do not supersede the necessity for consulting the Specifications, the prices at which the printed copies of the latter are sold have been added.

The number of Specifications from the earliest period to the end of the year 1866 amounts to 59,222. A large proportion of the Specifications enrolled under the old law, previous to 1852, embrace several distinct inventions, and many of those filed under the new law of 1852 indicate various applications of the single invention to which the Patent is limited. Considering, therefore, the large number of inventions and applications of inventions to be separately dealt with, it cannot be doubted that several properly belonging to the group which forms the subject of this volume have been overlooked. In the progress of the whole work such omissions will, from time to time, become apparent, and be supplied in future editions.

This volume contains Abridgments of Specifications to the end of the year 1866. From that date the Abridgments will be found in chronological order in the "Chronological

" and Descriptive Index " (*see* List of Works at the end of this book). It is intended, however, to publish these Abridgments in classes as soon as the Abridgments of all the Specifications from the earliest period to the end of 1866 have appeared in a classified form. Until that takes place, the reader (by the aid of the Subject-matter Index for each year) can continue his examination of the Abridgments relating to the subject of his search in the Chronological and Descriptive Index.

This volume contains Abridgments of Specifications relating to machinery and processes for preparing and cutting cork into sheets, lengths, squares, as well as into cylindrical and taper corks and bungs; for reducing cork to shavings and dust for stuffing, &c.; and for sharpening the cork-cutters.

It comprises also the manufacture of capsules; the various substitutes for corks; and the methods of securing capsules and stoppers to bottles, jars, and other similar vessels.

Appliances for bottling and decanting liquids are included, consequently siphons, vent-pegs, funnels, and corkscrews will be found in the volume; but taps are omitted; these (which are very numerous) belong more properly to the series entitled "Hydraulics."

It has been thought advisable to admit methods of stoppering inkstands, as many of the stoppers are on the same principle as ordinary bottle-stoppers.

The Abridgments marked thus (\* \*) in the following pages were prepared for another series or class, and have been transferred therefrom to this volume.

B. WOODCROFT.

*August, 1872.*

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# INDEX OF NAMES.

[The names printed in *Italic* are those of the persons by whom the inventions have been communicated to the Applicants for Letters Patent.]

	Page		Page
<i>Abeilhou, J. L.</i> .....	237	Berry, M.....	22
Adams, J.....	278	Betjemann, H. J.....	89
<i>Albertson, A.</i> .....	179	Betts, J. T.....	33, 34, 35
Albertson, S. D.....	179	—, W.....	41, 56, 61, 92, 160,
Archer, A. E. D.....	85, 90	166, 183, 185, 248, 261, 302,	316
Ardouin, A.....	123	<i>Betts, W.</i> .....	274
<i>Argy, E. A. L., d<sup>r</sup></i> .....	214	Bevan, E.....	288
Arthur, R.....	103	Bewley, H.....	40
Ash, R.....	83	Bird, H.....	226
Austin, J.....	127	Blackstone, L.....	129
—, J. B.....	303	Blain, J.....	76
Avery, J.....	120	Blyth, J.....	50
Bachelard, J. L.....	27	<i>Bohm, G.</i> .....	271
Bain, A.....	28, 125, 195	Boissimon, C. H.....	49
Baker, G.....	199	Bonfield, B.....	258
Baran, F. G. M. de.....	197	Boquet, M. V.....	194, 207
Baranowski, J. J.....	325	<i>Bordet, H.</i> .....	100
<i>Barbarin, A.</i> .....	325	Bore, R. H.....	313
Barker, G.....	264	<i>Borie, E.</i> .....	255
—, W. R.....	128	Borron, W. G.....	144
Barlow, C.....	98	Bossard, P. J.....	243
<i>Barrault, E.</i> .....	248	Bosselaers, C.....	193
Bass, J. H.....	13	Botham, W.....	301
<i>Bassot, Brothers</i> .....	329	Bourne, S.....	272, 286
Bate, J.....	230	Bousfield, G. T.....	227
Bateman, H.....	330	<i>Bousignes, G.</i> .....	299
Bathoe, C.....	325	Bradley, G.....	91
Bauckham, H.....	105	Breffit, E.....	172, 224
Baxter, C. F.....	255, 325	Brewer, E. G.....	285
Becker, J.....	328	Bright, R.....	59
Bellford, A. E. L.....	79, 83	<i>Brisset, A.</i> .....	318
Beltzung, F. J.....	70	Brockedon, W.....	21, 24, 31, 54
Belzon, B.....	196	Brooman, C. E.....	327
Berry, G.....	183	—, R. A. 61, 95, 110,	161, 164, 201, 299
—, H.....	11		

	Page		Page
Browne, J. H.....	87	Coyle, H.....	310
Bufnoir, G.....	120	Crapelet, C.....	113
Bünger, W.....	295	<i>Crocker, J. D.</i> .....	246
Burke, E.....	103	Crocker, W. R.....	185
—, W. H.....	48	<i>Crondal, A. C.</i> .....	266
Burrington, G.....	144	Crowe, C. H.....	294
<i>Butz, A.</i> .....	310	Crowley, T.....	1
Byrn, M. L.....	191	Cullis, W.....	199
		Cutcliffe, E.....	198
Campbell, J. H.....	93	Cutler, J.....	25
Candler, E.....	313		
Carter, W.....	8	Daft, T. B.....	87, 182
Cartwright, G.....	177	Dain, C.....	26
Castle, W. H. B.....	270	<i>Dalverny, P. A. A.</i> .....	168, 178, 208
Cate, G.....	263, 276, 284	Danaïs, P. L.....	227
—, W.....	276, 284	Danks, J.....	105
Cattaert, C. F.....	132	Danne, L. J. A.....	145
<i>Cazades, H.</i> .....	210	<i>D'Argy, E. A. L.</i> .....	214
Challinor, J.....	78	Daubigny, D. L. N.....	318
Chalus, A. G.....	133	Davies, G.....	255, 329
Chamberlain, A. P.....	148, 180	—, W.....	230, 263, 276, 284
<i>Chamblant, M.</i> .....	164	Davis, W.....	159
Chatonet, E.....	214	Dawson, T.....	112
<i>Chevalier, C.</i> .....	115	De Baran, F. G. M.....	197
Chidley, J. J.....	261, 271, 291	De Groote, C.....	224
Chinnock, C.....	242, 244	Denis, J.....	139
Chrimes, P.....	193	Dennis, W.....	326
Claeys, T. A.....	56, 122, 192	Desgranges, H. P. F.....	46
Clark, G.....	308	De Ste Marie, J. V. H.....	97
—, J.....	127	<i>De Trégomain, F.</i> .....	253
—, W.....	214, 228, 237, 241, 246, 253, 293, 318	Devereux, G. H.....	284
Clegg, R. D.....	318	Dixon, T. O.....	278
<i>Close, C.</i> .....	225	Doulton, H.....	173
Cludera, W. S.....	314	Downing, T. M.....	215
Clunes, T.....	147	Duncan, C. S.....	81
Cockshutt, E.....	100	<i>Du Rieu, J. J.</i> .....	214
Colyer, J.....	265	<i>Duvignau, B. A. S.</i> .....	126
Coney, J.....	104		
<i>Conroy, E.</i> .....	175	Edmonds, H.....	288
Conroy, E.....	238, 239	Edwards, H.....	153
Cooke, J.....	85, 282	Elliott, J.....	133
—, W.....	85, 99	Ellis, J.....	145, 222, 278
Cooper, R. B.....	9, 15, 46	Ellison, W.....	164
Cousens, R. B.....	75	<i>Enthoven, C.</i> .....	127
Cowper, C.....	65	Enthoven, F.....	127
<i>Coz, H. F.</i> .....	165		
		Fanshawe, H. R.....	17



# INDEX OF NAMES.

vii

	Page		Page
Fanshawe, J. A.....	219	Harris, C.....	322
Farjon, L. A.....	201, 243	Hart, E. B.....	233
Farrow, C.....	218	—, W.....	277
Fell, T. M.....	99	Hartell, T. R.....	189
Fèvre, G. D.....	66	Harvig, J.....	28
Finn, T.....	198	Haseler, G. C.....	30
Fitch, R.....	137	Haseltine, G.....	296
Fleet, B.....	232	Hay, A. K.....	189
Fleming, A.....	288	Hayward, R.....	255
Fletcher, W.....	36	Heathcote, J. A.....	76
Fontainemoreau, P. A.....	53, 78, 101, 107	Hely, A. A. R.....	57
Forgie, W.....	198	Hemming, G. P.....	310
Fox, H. B.....	300	Henry, M.....	168, 178, 208, 236, 316
—, J. W.....	321	Henshall, S.....	3
Fox, W. T.....	321	Heywood, B. J.....	119, 121, 125
François, E. S.....	236	—, J. K.....	329
Frankenstein, N.....	210, 234	Hicks, L. E.....	256
Fraser, H.....	320	Hill, T.....	285
		Hills, R.....	113
Garrett, S. T.....	298	Hine, W. C.....	291
Garton, C.....	285	Hinks, J.....	146
Gauci, J.....	28	Hipkins, W. E.....	112
Gedge, J.....	108, 115, 126	Hopkins, R.....	88
—, W. E.....	196, 266	Horsey, H.....	199
Geeves, W.....	32	Houssart, R. V.....	95
Gendrot, E.....	319	Houston, R.....	95
Geyelin, G. K.....	292	How, A. P.....	144
Gilbee, W. A.....	71, 156	Howell, F. B.....	130, 140
Gilbey, W.....	333	Hubert, H.....	234
Gillies, J.....	273	Hull, C.....	271
Glover, C. C.....	77	Hurst, C. H.....	199
—, H.....	105	Hutton, T.....	319
Goodspeed, I.....	245		
Goodyear, H. B.....	287, 292	Ireland, G.....	294
Gore, W. H. P.....	305	Isham, J. G.....	179
Grant, D.....	6		
Griffin, C.....	222	Jackson, J.....	296
—, J.....	222	Jacob, G. W.....	56, 86
Griffiths, R.....	128	Jacquesson, A.....	300
Groote, C. de.....	224	James, H. G.....	81
		Jaques, J. A.....	219
Halkett, P. A.....	82	Jennings, J. G.....	210, 257
Hamilton, E.....	269	—, T.....	94
Hammer, G.....	310	Johnson, J. H.....	100, 160, 170, 189, 201, 217, 269, 274, 287, 292, 300, 310, 319, 325
Hancock, C.....	39		
—, T. G.....	25, 54		

	Page		Page
Johnston, J.....	236	<i>Mackie, A.....</i>	255
——, W.....	13	MacLean, A.....	91
Jones, F.....	152	Malinau, N.....	80
——, T.....	4	<i>Mallam, B. W.....</i>	272
Kennan, J.....	317	Manuel, A.....	328
Kilburn, C.....	290	Maschwitz, C.....	254
Knight, R.....	157	<i>Masson, M.....</i>	170
Knott, J.....	153	Masterman, J.....	10
<i>Krauskopf, F.....</i>	254	——, T.....	10
<i>Kührmann, F.....</i>	295	Masters, T.....	59, 68
Labat, J. A.....	89, 135	Mathieu, F.....	72
<i>Labat, P.....</i>	329	<i>Mathieu, J.....</i>	201
<i>Laburthe, C.....</i>	266	<i>Matthews, J.....</i>	299
Lachenal, L.....	29	May, C.....	283
<i>Lamoureux, J. H.....</i>	319	Mayo, W.....	49, 55
Lane, F.....	286	Mellish, T. R.....	84
Lang, B.....	211	Methvin, D.....	114
Langford, J.....	183	Middleton, S.....	320
Lanco, F. M.....	66	Miles, T.....	113
Larkin, N. J.....	19	Mill, W.....	51, 96
<i>Laurens, C. P.....</i>	253	<i>Millar, A.....</i>	165, 202, 204
Lavater, M. L. J.....	257	Millar, J.....	143
Lawrence, G.....	18	Miller, J.....	249
Leffler, C. J. L.....	146	——, S.....	2
Leroy, N.....	41	Mitchell, E.....	64
Leuchars, W.....	191	Mondollot, A.....	84
Levisohn, L. J.....	304	<i>Mondollot, A.....</i>	217
<i>L'Hôte, J. C. J.....</i>	161	——, J. A.....	217
Lichtenstein, J. H.....	109	Monument, H.....	113
<i>Liéizard, J. N. M.....</i>	241	Morand, P. J.....	321
Lloyd, R.....	12	Mordan, F.....	99, 170, 194
Loach, J.....	38	Moreau, F.....	28, 42
Longbottom, A.....	301	Morrell, G. F.....	116
——, J.....	301	Mott, A. J.....	221
Luis, J.....	158, 162, 173	Munro, W.....	163
Lund, T.....	20	Murdoch, J.....	38
——, W.....	112	Murray, Sir J.....	180
Maberly, F. H.....	169	Musselwhite, J.....	188
MacAdam, W.....	269	Naden, T.....	259
MacCallum, D.....	223	Neale, E. V.....	112
MacDowall, J.....	295	——, J.....	248
MacFarland, C.....	322	Neilson, J.....	273
MacGlashan, J.....	331	Newton, A. V.....	134, 151, 175,
Macinnes, J.....	35	——, W. E.....	245, 266
Macintosh, J.....	147	——, W. E.....	63, 74, 148,
			154, 202, 204, 225, 307, 323

# INDEX OF NAMES.

ix

	Page		Page
Nibbs, J. S.....	146	Ridsdale, J.....	187, 218
Nicholls, H. M.....	213	<i>Rieu, J. J. du</i> .....	214
Northern, W.....	159	<i>Rigolet, A.</i> .....	108
Norton, J. E.....	57	Rimmell, E.....	303
Nouveau, J. C.....	162	<i>Rittmeyer, A.</i> .....	285
		Roberts, J.....	132, 142
<i>Olivier, P. A.</i> .....	318	Robertson, P.....	152
Ollivier, L. B.....	180	Robinson, T.....	288
Osborne, C.....	23	——, T. F.....	154
Owen, G.....	40	Rogers, G.....	115
		——, H. J.....	290
Palmer, W.....	213	Roper, J.....	290
<i>Palyart, V.</i> .....	327	Rostaing, C. S.....	187
Parker, S.....	17	Rowbotham, J.....	12
Parris, R.....	69	Rudkin, J.....	184
<i>Pastorius, F. D.</i> .....	296		
Pearce, W.....	161	Sanders, H. J.....	309
<i>Pécaut, C. F. A.</i> .....	318	Saulay, O.....	211
<i>Peret, A.</i> .....	253	<i>Sawan, L.</i> .....	316
<i>Perret, F.</i> .....	293	Scholfield, J. M.....	290
Perry, J. J.....	332	Scott, J.....	82, 124, 143
——, R. C.....	226	Scully, V.....	112, 121, 125
——, S.....	73, 332	Seithen, A. B.....	109, 116, 135
<i>Peurv, J.</i> .....	173	——, J.....	105, 116, 150
Pichery, A. M. A.....	227	Settle, W.....	299
Pickering, J. A.....	254	Sharp, F. E.....	171
Pinkney, R.....	106	Shaw, T. G.....	97, 114
Pitman, J. T.....	164	<i>Shaw, W. A.</i> .....	227
Plinth, C.....	5	Shrapnel, H. N. S.....	24
Plum, T. W.....	330, 333	Sibly, N.....	297
Pond, C.....	272	Simpson, F.....	131, 142
Poole, M.....	44, 47	Smith, C.....	48
Powell, W. A. F.....	163, 167	——, J.....	277
Price, W.....	206, 220	——, M.....	277
Procter, S.....	262	<i>Solon, V. H.</i> .....	228
		Spiers, F.....	272
Quelle, E. E.....	259	<i>Squire, J. J.</i> .....	323
Quince, J. C.....	158	Standish, C. W.....	315
Quiquandon, J. B. A.....	107	Stansbury, C. F.....	103
		Steers, E.....	6
Rae, W. F.....	91	Ste Marie, J. V. H. de.....	97
Rammell, T. W.....	56	Stenhouse, J.....	228
Rand, J.....	34	Stephens, H.....	19
Read, W. T.....	306	Stevens, G. H.....	137
Redmund, D.....	7	Stocker, A. S.....	36, 41, 50, 68,
Redrup, G.....	173, 250, 297		102, 331
Ridgway, W. H.....	157		

## INDEX OF NAMES.

	Page		Page
Strand, L. F.....	56	<i>Vander-Hagen, F.</i> .....	193
Struthers, W.....	249	<i>Vaughan, H.</i> .....	198
Taylor, W. H.....	118	<i>Vieyres, A.</i> .....	29
Taylor, E. H.....	283	<i>Villette, L.</i> .....	306
——, J. G.....	89, 94	Walker, R.....	220
——, W.....	92	Watkins, C. A.....	304
——, W. R.....	280	Watson, A.....	138
Templemore, E.....	279	Welch, G.....	242
Theyson, R.....	235	West, B.....	45
Thomason, E.....	4	——, F. H.....	52
Thompson, J.....	195, 275	Westwood, E.....	189
——, N.....	229, 237, 240,	White, D. B.....	231
244, 251, 258, 260, 263, 267,		Wilkins, J.....	197
273, 276, 281, 282, 289, 312,		Wilkinson, W.....	229
314		Williams, A. H.....	138
——, W.....	324	——, C.....	164
<i>Thomson, Alex.</i> .....	8	<i>Willmot, G. R.</i> .....	307
——, Arch.....	8	Wilson, F. A.....	111
Thomson, Arch.....	8	——, G.....	190, 200, 212
——, K. N.....	16	Wisker, J.....	15
——, S.....	8	Wood, I.....	165
<i>Thouzellier</i> .....	168	Woodman, C. T.....	268
Tiernan, R.....	200	Youil, J.....	62
Tinkler, R.....	169	Young, W.....	58
Toogood, W.....	128		
Tooth, C.....	139		
Trappnell, H.....	253		
<i>Trégomain, F. de</i> .....	253		
Trouttett, P. A. A.....	177	<i>Zacharie, I.</i> .....	233
Tyler H.....	26		

## INTRODUCTION.

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LIEBIG in the ninth of his "Familiar Letters on Chemistry" writes "what precious properties are combined in cork!" "We might cudgel our brains in vain in the hope of replacing cork, as the ordinary means of closing bottles, by any other substance whatever." "Let us imagine a soft, highly elastic mass, which nature herself has impregnated with a matter of properties resembling wax, tallow, and resin, yet dissimilar to all these and termed *suberin*; this renders it perfectly impermeable to fluids, and in a great measure even to gases."

The following information respecting the cork tree (*quercus suber*) has been collected from various cyclopædias (particularly the Penny Cyclopædia) and the works of Lindley, Loudon, Waterston, and Tomlinson. The tree is an evergreen oak, growing abundantly in the south of Europe, namely, in Portugal, Spain (especially Catalonia and Valencia), Italy, the south of France, and Corsica; it is more beautiful than the common evergreen oak (*ilex*), and in districts suited to it attains a great height, 30 feet or more. The species bears the climate of London, but acquires little of its natural beauty in this country. In the property of forming a spongy soft substance on its bark it surpasses all other European trees, and hence it is of the greatest value for corks and for similar purposes.

The substance commonly known as cork (a corruption or contraction of the Latin word *cortex*) is the elastic outer bark of the tree. The bark of all trees consists of a parenchymatous or soft cellular substance and a harder ligneous tubular tissue; in most species the latter is most abundant; in the cork tree the former constitutes the mass of the bark, and hence its elasticity and the facility with which it is cut in all directions. When the bark is first generated, it is much less elastic than it becomes subsequently; this is owing to its consisting in the first instance of a large proportion of woody matter. When the woody matter is once formed

(which takes place in the first year of its growth), it never increases, however long the bark may remain in a living state, whereas the parenchymatous substance continues to grow as long as the bark is alive, and if the growth of the parenchyma is prolonged and rapid, a corky substance is the necessary consequence. As soon as the bark dies it of course ceases to grow, and then not distending as it is pressed upon from within it falls off in flakes. The inner bark remains attached to the tree, and if removed, *which ought not to be done*, is only fit for tanning.

The careful removal of the outer bark does not in any way injure the tree, as it is really dead bark; on the contrary the tree is said to grow more vigorously and to live longer in consequence of being stripped. The bark is taken off by making a circular cut round the trunk immediately under the main branches, and another a few inches above the surface of the ground. The portion of bark intervening between the two cuts is then split down in three or four places, care being taken not to penetrate the inner bark in making any of the cuts. This operation is performed in the months of July and August, when the tree is about fifteen years old; it may be repeated once in every eight or ten years. The first stripping is of least value; the produce becomes greater in quantity and better in quality at each successive stripping. A cork tree thus periodically barked will live for 150 years. McCulloch in his commercial dictionary states that the tree should not be barked until it is from 26 to 30 years old.

It is usual when the bark is taken from the tree to char it slightly in order to improve the texture by closing the pores; this charring however requires great care, as it is apt to impart a peculiar and disagreeable empyreumatic flavour to liquors which have been stoppered with cork thus treated. Some years ago an attempt was made to avoid this evil by using cork bark which was not so old, but so close in texture as not to need the aid of fire; this bark was too thin for ordinary purposes, and two or three layers had to be cemented together. The risk of bad flavour was by this means prevented, but the plan has not been persevered in. In abridgment A.D. 1819, January 6, No. 4327, Mr. Carter cuts cork bark into slices and cements the slices together, but his object is to produce corks "all whites." After the charring the cork is laid to soak for a time in water, after which it is placed under weights in order to be pressed straight.

In Tomlinson's cyclopædia of useful arts, the details given of

oak bark gathering and preparing vary in some respects from the foregoing. He states that the handle of the axe used in cutting the bark is wedge-shaped. The bark is beaten to detach it from the inner bark and is raised up and removed by introducing the handle. The detached pieces are soaked in water, and when nearly dry are placed over a fire of coals which blackens the surfaces, makes them smooth, and conceals the smaller blemishes. The larger holes and cracks are in some cases filled up with soot and dirt. The pieces are next flattened by means of weights, and then dried and stacked or packed in bales for exportation.

No cork has been discovered in Egyptian antiquities, whence it may be inferred that the Egyptians were not acquainted with it. The Greeks called both the tree and the bark *φελλός*; the principal use that they made of cork was to serve as floats for fishing nets. The Romans named the tree *suber* and the bark *cortex*; they used the bark for stoppers, for floats to nets, for anchor buoys, for swimming corks, and sometimes for helmets (Virg. Aen. vii. 742). Such ladies as wished to appear taller than nature had formed them added layers of cork to their sandals; high heels had not then been invented. The practice of employing cork for swimming with is mentioned by Plutarch in his life of Camillus; he tells us that the messenger, whom Camillus sent to the Capitol when it was besieged by the Gauls, put on a light dress and took cork with him under it, because to avoid being taken by the enemy it was necessary for him to swim across the Tiber.

The quantity of cork annually imported into England averaged (for the five years ending 1835) 44,551 cwt. This quantity has increased; in 1863 as much as 60,000 cwt. was imported, and in 1866, 6,241 tons of unmanufactured cork and upwards of 2,684,000 ready-made corks.

Nearly the whole of the cork imported into England is brought from Portugal; it comes generally as *dunnage* in ships laden with wine. The best white cork is grown in the south of France.

The native country of the vine has long been a *vexata quaestio* among botanists; its cultivation extends "from near 50° north latitude to the equator, but in south latitudes it extends only "as far as 40°" (Pen. Cyc.); it is cultivated at various elevations, "on the Himalaya as high as 10,000 feet above the level of "the sea" (Pen. Cyc.). The vine will bear any degree of heat, but not heat combined with moisture, consequently the fruit in European countries is not so good in wet seasons.



The ancients, there can be little doubt, were in the habit of drinking the expressed juice of the grape before fermentation, and when we consider the extreme facility of the process of wine making in its simplest form, we need not wonder that the art of making wine should have been discovered at a very remote epoch. In Gen. ix. we read that Noah planted a vineyard, drank of the wine, and was drunken. In chapter xiv. that Melchizedek brought forth bread and wine; in chapter xl. of the dream of Pharaoh's butler.

The Romans probably introduced the vine into England. Bede writing in A.D. 731 says, "there are vineyards in several places;" "the vineyards in Great Britain were generally connected with "monasteries." When monastic institutions were abolished, vineyards very generally disappeared in England, probably on account of there being no monks to attend to them, and better wine being obtained from the fruit of other countries.

The tradition respecting the origin of wine in Persia, as told by Sir John Malcolm, reminds one of Lamb's humorous account of the discovery of roast pig. An ancient monarch named Jemshed or Dschemschid had an extreme fondness for grapes, and stored away a quantity in a vessel of considerable size. Some time afterwards when the vessel was opened, it was found that the grapes had fermented, and that the juice from them was acid. The monarch, believing that the contents of his vessel were poisonous, had the vessel labelled accordingly. Gulnare the beautiful, a lady of his harem, oppressed with nervous headache, &c. &c. and tired of life, resolved to kill herself, and had recourse to the vessel in order to carry out her project. She took a long draught and sank beneath its influence, or in plain terms got intoxicated. She slept long, awoke well, had again recourse to the poison, and repeated the dose so often that she finished the whole. The monarch discovered what she had done, and took the hint to his own advantage.

As this is not intended to be an introduction to wine-making and wine-drinking, it will be sufficient to say that the following conclusions may be gathered from the writings of classical authors:—that the ancients preferred old wine to new; that they sometimes mixed different sorts of wines together; that they frequently flavoured their wine with a variety of substances, for example, sea water, honey, spices, perfumes, &c.; that they usually drank their wine mixed with water; that they drew off a quantity for

immediate use from the skin, jar, or cask, into a smaller vessel; and that they drank the mixed wine out of ornamental cups of varied shape and size. The wine vessels and drinking cups preserved in the British Museum are well worth inspection.

The earliest receptacle for wine and liquids was most probably the skins of animals, principally the skins of goats; of such material was the bottle (Gen. xxi.) given by Abraham to Hagar, and the "wine bottles, old and rent and bound up," mentioned in Joshua ix. Herodotus (ii. 121) proves that both Egyptians and Greeks used goats' skins for such purpose. He is relating one of his droll stories respecting the robbery of King Rhampsinitus's treasury. One of the robbers having to pass certain sentinels loads his asses with ἀσχοί filled with wine; now ἀσχος is the Greek word for skin of animal, leathern bag, &c., and the word used by Homer for wine skins and for the bag in which Aeolus bottled up the winds for Ulysses; and the inference is that the robber would have avoided any unusual custom which might have betrayed him. It may be more readily accepted that skins were the earliest receptacles, when we reflect that transportation from place to place was effected on the back of men and of beasts of burden. Several examples of such carriage may be seen in the British Museum; on one of the walls of the "Assyrian basement room" is a sculpture of a lad drinking from an opened end of a skin. The skins were made waterproof by being besmeared inside with oil or with resin or bitumen which imparted a flavour to the wine. Wine drinkers became so accustomed to this flavour that when in after times wine was kept in earthenware vessels a quantity of resin or bitumen was put into the bottom of the vessel to give the wine the peculiar flavour. "In Egypt," remarks Sir G. Wilkinson, "a resinous or bituminous substance is always found at the bottom of amphorae which have served for holding wine." The ἀσχος varied of course in size according as it was made from one or more skins. Athenaeus (v. 7) in narrating a festal procession mentions a cart in which was an ἀσχος made of panthers' skins and containing 3,000 μετρηται (the μετρητής was equal to nearly 9 gallons). Wine was allowed to flow slowly from it as it was borne along. It is presumed that so enormous a wine-bag was protected by some solid casing to resist the lateral pressure of such a body of liquor.

The next receptacles for wine appear to have been earthenware jars of various shapes and sizes; there are two in the British

Museum well worth the looking at; they are of large size, too large to be readily moved, and pierced with holes here and there in their lower parts, apparently for spigot holes. These vessels were placed upright in the cellars in rows, the innermost resting against the wall, and consequently the wine therein the last used and therefore the oldest. Horace (Odes 11. 3) describes a friend as enjoying himself on festal days "*interiore nota Falerni*" (*with an inner brand of Falernian*). When the vessels were stoppered and stowed away, each was stamped with the name of the Consul in whose year it was filled, or had affixed to it a label with such an inscription.

Pliny (xiv.) states that in the neighbourhood of the Alps wines were stored in wooden vessels which were bound with hoops. Cato also directs that *dolia* (*casks or barrels*) should be bound with lead or oaken hoops. Mr. Redding in writing on modern wines informs us that in some parts of Spain they use huge clay vessels holding 800 gallons each and called *tenejas*; that the wine mells in these receptacles and is drawn off thence into skins. That in other inland parts southwards the wines are generally kept in skins as being easier of carriage; these skins he says are often so defiled, even in the tavern, with the pitchy taste and the filth of the uncleansed skin, to say nothing of the deposit owing to the coarse conduct of the vintage, that the wines cannot be drunk by a foreigner at all. That at Pesth in Hungary marble vessels are employed for holding wine. That in Cyprus conical earthen vessels are used in fermenting wines; these vessels are sometimes pitched or anointed when they come from the furnace with a boiling mixture of turpentine and pitch mixed with vine-branch ashes, goats' hair, and very fine sand; they contain from 12 to 20 barrels. That a large proportion of Cyprus wine is transported in skins. That in Georgia the use of skins daubed with asphaltum taints the wine so that few strangers can touch it. That the term "*Flask of wine*" is essentially Tuscan, the wine being served out to the consumer in vessels so denominated and shaped like a well-known oil vessel. A flask holds about 3 quarts. When filled a little oil is put into the neck to keep the wine effectually from the air; when the wine is to be poured out, a bit of tow is inserted to draw off the oil from the surface of the wine.

Stoppering:—Certain customs among the ancients are difficult to define; they were so universally well known to them that

authors did not enter into details. Take for example the stanza in Horace's Odes iii. 8,

Hic dies, anno redeunte, festus  
Corticem adstrictum pice dimovebit  
Amphorae fumum bibere institutae  
Consule Tullo.

This day, the year returning, festive  
The cork fast-bound with pitch shall draw  
From the amphora put-up the smoke to drink  
In the consulship of Tullus.

From this we learn that cork was used as a stopper (but not a close-fitting stopper); that the cork was secured with pitch; that the wine was put into an amphora (an earthenware vessel, tall and narrow, with a small neck and a handle on each side of the neck, and terminating at the bottom in a point which was let into a stand or stuck in the ground so that the vessel stood upright); that the amphora was put-up in a place (called *apotheca*) to which the smoke (from the bath) had access (to ripen the wine and improve its flavour); and that the wine was made in the year in which Lucius Volcatius Tullus was consul (B.C. 66), the year before Horace was born. The wine had been therefore upwards of 40 years in the amphora. It seems not improper to mention in this place that various ages (from 1 to 200 years) are assigned to wines by ancient writers. L. Opimius was consul, B.C. 121. The great heat of the autumn of this year caused the wine to be of unprecedented quality, and samples of the *vinum Opimianum*, Pliny tells us (xiv.) were in existence in his day, nearly 200 years after. He describes it as being reduced to the consistence of rough honey, and like other very old wines so strong and bitter as to be undrinkable even when largely diluted with water. Such wines he adds were useful in flavouring others. From this last mention and from Pliny's description of *vina fictitia* (*made-up wines*) it may be suspected that there were tricks in the wine trade in ancient as well as in modern times.

Sir G. Wilkinson informs us that the wine vessels of the Egyptians "were closed with a lid resembling an inverted saucer, covered with liquid clay, pitch, gypsum, mortar, or other composition which was stamped with a seal."

"We everywhere," writes Beckmann in his *History of Inventions*, "find directions given to close up wine casks and other vessels with pitch, clay, gypsum, or potters' earth, or to fill the

“ upper part of the vessel with oil or honey in order to exclude the air from those liquors which one wished to preserve. Columella teaches the manner of preparing cement for stopping up wine casks. The earthen wine jars found at Pompeii appear to have had oil poured over them and to have had no other care bestowed on them. Stoppers of cork seem to have been introduced after the invention of glass bottles, and of these, no mention is made before the 15th century. In the year 1553, when C. Stephanus wrote his *Praedium Rusticum*, cork stoppers must have been very little known, else he would not have said that in his time in France cork was used principally for soles.” In another place he writes, “ In the shops of the apothecaries in Germany cork stoppers began to be used about the end of the 17th century. Before that period they used stoppers of wax which were not only much more expensive but also far more troublesome. Neither Ruellius nor Aldrovandi, who wrote in the 16th century and describe all the other purposes to which this substance was applied, mention its use for stoppers.”

Although the Egyptians were acquainted with glass-blowing at least as early as the reign of the first Osirtasen, upwards of 3,500 years ago” (Wilkinson), and again although “ glass vases, if we may trust to the Theban paintings, are frequently shown to have been used for holding wine at least as early as the Exodus, 1,490 years before our era,” and although the Romans occasionally in later times used amphorae of glass, no close-fitting stoppers made of a *single* material have been discovered.

Corks for wine “ should be sound, well cut so as to press equally on every part of the neck, and perfectly new, or they will impart a bad taste to the wine. Any corks with blackness or the remains of the bark upon them must be rejected. The tops of the corks and one-fourth of an inch of the necks should be dipped into a hot composition of resin, Burgundy pitch, yellow and red mastic, in some cases with the addition of tallow” (Redding, 1851). We need not apprise the reader that capsules are quite as effective as this composition and much more cleanly and ornamental.

The assertion that cork-stoppers, such as are now used, are of comparatively modern date is strengthened by the following account of the origin of mousseux or sparkling champagne (abridged from the work of Messrs. Thudicum and Dupré):—Champagne has produced red and white wine since the time of

the Emperor Probus, A.D. 280, but it was not until the end of the 17th century that the manufacture of wine was so perfected that the production of mousseux for a trade was thought of. In the abbey of Haut Villers was a monk named Dom Pérignon, who managed the cellars of the abbey from 1670 to 1715. Before his time the art of stoppering bottles with corks was not known, the only stoppers used being bundles of hemp dipped in oil, a mode of stoppering which we know to be used in some parts of Italy even now-a-days. The monk was the first who tried the experiment of close-fitting corks, and the success of his experiment led to the systematic fabrication of the mousseux wines for which Champagne is famous. A passion for such wines arose and increased when the cause of the effervescence was understood. In 1835 about 5 millions of bottles were exported from France, in 1866 about 22 millions.

The following description of the bottling of champagne is extracted from Mr. Redding's work on wines, and from Messrs. Thudicum and Dupré's work on the History, &c., of wines :— The bottles which have been approved are well washed, inverted and allowed to drain, rinsed with spirits of wine, and kept closed with an old cork until required for filling. They are filled to a height of about two inches from the top of the neck. In Mr. Redding's time (1851) the workman having filled the bottle passed it by his right side to the corker who sat on a stool, having before him a little table covered with sheet lead and not higher than his knees. He, judging the space necessary to be left between the cork and the wine, regulated it very nicely, chose a cork, moistened it, introduced it into the bottle, and struck it two or three times with a wooden mallet so smartly that a stranger would have thought that the bottle must be broken by the violence of the blows. Breakage however is rare in the hands of an experienced workman who has paid attention to placing his bottle solidly and resting it with a perfectly even pressure upon its bottom. The bottle thus corked was passed again by the right hand to a third workman who tied the cork down with string, by him to a fourth who wired it and passed it to a fifth, whose duty it was to place the bottles (on their bottoms) in the form of a parallelogram, so that they could be counted very readily. The daily labour of an atelier was calculated at 8 casks of 180 litres each, or a drawing, &c., &c., of 1,600 or 1,700 bottles. Now (1872), Messrs. Thudicum and Dupré inform us, "the

“corking is effected by a machine; it consists mainly of two parts, one of which compresses the cork laterally, while the other sends it to the extent of one half into the neck of the bottle. The corks used are cylindrical, two inches long, and one inch in diameter; their price has risen to 80, 90, or 100 francs per 1,000. Few persons have any conception of the compressibility of cork until they have seen it used in the Champagne manufactory.” Formerly many champagne manufacturers covered the stopper and neck of the bottle with resin or wax; this practice has given way to the equally efficacious and more cleanly covering of tin or lead foil.

Siphons:—The Greek word  $\sigma\acute{\iota}\phi\omega\nu$  “is evidently oriental, and derived from the word *siph* or *sif*, to imbibe or draw up with the breath, analogous to the origin of our own expression *to sip*” (Wilkinson). The same author informs us that siphons are shewn to have been invented in Egypt at least as early as the reign of Amunoph II., 1,450 years before our era, and they again occur in the paintings of the third Remeses. In a tomb at Thebes bearing the name of Amunoph their use is unequivocally pointed out by one man pouring a liquid into some vases, and another drawing it off by applying the siphon to his mouth, and thence to a larger vase.”  $\Sigma\acute{\iota}\phi\omega\nu$  in earlier Greek meant a tube, a hollow stalk, a pipe; it was inserted through the stopper for the purpose of tasting the wine. One of the remaining lines of Hipponax (B.C. 546) may be translated “with slim siphon the stopper having bored.” At what period the Greeks became acquainted with the bent siphon is more uncertain. In the Penny Cyclopædia the invention is assigned to Hero of Alexandria (about B.C. 150); but Hero, in his Treatise on Pneumatics (translated by Professor J. G. Greenwood, and edited with numerous woodcuts by Mr. B. Woodcroft (1851)), frequently mentions the bent siphon as a well-known instrument.

Corkscrews:—In the introduction to Stuart’s Anecdotes of the Steam Engine (1829) there is a graphic description, with woodcuts, of the gradual development of the corkscrew. He states that the inventor of bottles is not known, but that they were in use for centuries before corks were thought of, and these again were employed for generations before a convenient method was hit upon for their extraction. The first mode of gaining access to the contents of the bottle he supposes to have been “beheading the bottle;” the second, removing the impediment by a



dexterous twist of the fingers; the third, calling in the teeth as natural auxiliaries; the fourth, dislodging the plug particle by particle by aid of a nail, and occasionally sending the obstacle the wrong way; the fifth, inserting a pair of skewers "witchwise;" the sixth, twisting the lower end of a wire into a spiral form and adding a handle. The last he considers to have been "the thought of a master genius," and to have "sufficed mankind for ages." He assigns the invention of placing a button at the upper end of the worm to a lady, a hostess named Miss O'Rourke, whom he eulogizes for her "exquisite potteen punch," her "mental and corporeal beauties," her partiality for Kosciusko, and for "a rhapsody" in his honour composed by her. He adds that after the death of Miss O'Rourke "a piratical screwmaker took to himself the credit and profit of the button addendum." The corkscrew was now complete, and improvements thereon, as may be seen by some of the abridgments in the present volume, have been chiefly directed to mechanical means of raising the worm and cork from the bottle.

In the "Reports of the Juries" on the objects exhibited in 1851, there are a few notices of bottling machines, and of specimens of corks and corkwood; in their reports of the Exhibition of 1862 mention is made of corks for bottles, cork-cutting machines, corking-machines, and corkscrews; but in neither Exhibition were there many exhibitors.

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PREPARING AND CUTTING CORK;  
BOTTLING LIQUIDS; SECURING  
AND OPENING BOTTLES, &c.

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## PREPARING AND CUTTING CORK; BOTTLING LIQUIDS; SECURING AND OPENING BOTTLES, &c.

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A.D. 1777, April 26.—N<sup>o</sup> 1153.

CROWLEY, THOMAS.—“ A certain engine or machine, consisting of divers parts, to be applied and used for splitting, cutting, paring, shreading or dividing hides, skins, and leather in length and breadth, severing the flesh side from the grain side, parting the whole substance into two or more different divisions; and also for cutting, sawing, splitting, or dividing after the like form and method, wood, cork, bone, horn, ivory, or other substances which may be required to be cut, sawed, split, or divided in length and breadth.” The patentee describes two machines, by either of which the first part of the title may be carried out; the one applicable to both parts is described with reference solely to the first part. The construction of it is as follows:—In the middle of “a long plain table” are fixed two pillars, one on each side, and the ends of a knife “move in sockets placed in the two pillars.” One end of the knife has a hinge fastened to it, and by means of the hinge is connected to it machinery composed of wheels, pinion, two handles, crank, and connecting rod; the stand carrying this machinery is secured to the pillars. The hide is fixed on “a plank or stone” which is hollowed out “according to the thickness the grain side of the leather is intended to be left when separated.” At the top of the hollow is a row of points whereon one end of the hide is fastened. The plank is laid on the table “and put under the knife” until “the leather meets the edge.” A “plank or stone” is placed upon the hide and united to the table by claws and screws. “A piece of strong cloth” is placed upon the table “behind the knife;” one end is attached to hooks on the

farther end of the hollowed plank, the other to a roller at the farther end of the table. The roller is moved by the machinery before mentioned.

By using a saw or other suitable instrument instead of a knife cork and other substances may be cut by the machine.

[Printed, 8d. Drawing.]

A.D. 1795, April 14.—N<sup>o</sup> 2047.

MILLER, SAMUEL.—“An entire new machine and process for the purpose of preparing cork, both for ornament and use, in a much more cheap and expeditious manner than by any method hitherto practised, and by means of which cork so prepared will be of a superior quality.” The cork is first softened by steaming or boiling in a square copper, “or it might be work’d cold.” It is then secured by “two narrow plates of iron” in a frame which moves in a groove in a large frame by means of a lever. Both frames slide to and fro on a bar “in a right line with the axis” of a tool fixed in a hollow mandrel which receives swift motion from wheelwork. The small frame is shifted “a proper distance to repeat the operation” by suitably arranged “rack, catch, tripper, and lever.” The tool “cuts the corks of a cylindrical shape,” and they drop out of the mandrel. The corks and bungs thus cut are such as are “used by the London brewers.”

In cutting “bottle corks” the cork is placed “edgeways to the tool ;” it is held firm between a screw and a piece of wood provided with “long slender points,” and “the corks are cut round the whole breadth of the cork.” A knife “is forced forward in a straight line to a sufficient distance to separate the whole at one stroke ;” the arrangement of the knife is described.

In the sheet of drawings is “a view of the tool for cutting the cork into square pieces” for the purpose of preparing them for a “straight line machine,” and for cutting the shavings into stuffing for beds and seats. The wheel by aid of which the knife moves is “full of notches,” whereby it may be turned “to a greater degree of truth for the thin shavings ;” and “for cutting the cork square for different sizes,” a rack, &c., as before mentioned is employed.

Sometimes the machine is arranged to act “directly the reverse to that already described ;” in this case “the cork turns

"round, and the knife moves in a straight line;" this arrangement also is described.

A "compressing machine for closing the pores of the cork" is a piece of metal made with suitable holes into which the corks are put by hand; the pressure may be effected "as most convenient."

The patentee describes also a "bottle corker;" it is composed of (1) a "hook which holds the neck of the bottle;" (2) a piece of metal perforated with a hole "something less than the cork;" and (3) a rack worked by a pinion and handle and carrying at its lower end a plunger which forces the cork through the hole into the bottle.

[Printed, 10d. Drawing.]

A.D. 1795, August 24.—N<sup>o</sup> 2061.

HENSHALL, SAMUEL.—"A new method of constructing and improving corkscrews." The spiral part is made on a steel mandrel, and at its upper end is fixed a cap or button "concave" on its under side, by which construction the screw has much "more power over the cork and holds it much firmer together than the common screw can do, and the hand is thereby enabled to turn it round" and twist out the cork "much easier and without breaking the cork."

"A more artificial or compound way:"—The stem of the corkscrew works in a frame having a brass female screw at the upper part thereof. Inside the handle is "a small mortice lock or catch" which can be raised by a screw or button, and likewise a hollow space at the upper end of the stem "into which the female screw passes before you begin to act." The catch enters a square hole in the frame.

When the frame has been screwed up, the worm is to be passed into the cork until the cap reaches the top of it; the catch is then to be raised by its screw, and by turning round the handle "the cork will be drawn, coming within the hollow space of the frame."

Sometimes the corkscrew is made with a cylindrical socket "which is to receive the neck of the bottle into it in order to guide the screw centrally into the cork."

[Printed, 6d. Drawing. See Rolls Chapel Reports, 6th Report, p. 189.]

A.D. 1802, May 7.—N<sup>o</sup> 2617.

**THOMASON, EDWARD.**—"New invented material article in "the making of corkscrews." The cork is extracted by "the "simple continuation of turning the screw to the right hand," and is discharged from the screw by "turning or unscrewing "towards the left hand."

The corkscrew is composed of the following parts:—(1) a handle; (2) a male screw riveted or otherwise fastened to the handle; (3) a worm secured to the lower end of the male screw; (4) "a hermaphrodite screw," being the female to the male screw and the male screw to (5) an outer frame work, which works upon the hermaphrodite, and is prevented from coming off by a "bowl part" at its lower end and by a shoulder at the upper end of the hermaphrodite.

The corkscrew may be made of any metal or composition of metals or of any material sufficiently strong for the purpose, and the mode of construction may be varied "as a difference in "circumstances may require."

[Printed, &c. Drawing.]

A.D. 1811, March 14.—N<sup>o</sup> 3416.

**JONES, THOMAS.**—"Improvements on a machine for cutting "corks and bungs." The cork, placed in a bed or carriage between two side frames and pressed down by a screw, is pushed forward against a hollow steel cutting tool (which is fastened on the nose of a hollow mandrel) by means of a lever acting upon a pin on one of the side frames. A stop regulates the length of the cork, and a knife drawn forward by a weight is arranged "to "turn thro' the piece of cork and cut off all the corks and the "waste material surrounding them, both which fall down into a "basket or box below."

The arrangement of the various parts of the machine and the method of working it are described, but the patentee claims only improvements in the mandrel and in the cutting tool.

A lever or handle forces a rod through the mandrel; the rod terminates in a plug or plate which "serves to push out bungs "or broken corks or other obstructions which may stick in the "cutting tool."

The cutting tool is made (1) with "its front edge cut into teeth "like a saw, and its inner surface toothed like a float or quonet;,"



it is used principally "for cutting and shaping bungs," and its inner surface "is of a taper or conical figure;" (2) with "a cutting edge in front, and its interior gradually widened so as to admit the cork to pass more readily through the mandrel;" (3) differing from No. 1 "in its front edge, which resembles that of a knife, and its general figure and dimensions which are adapted for cutting and tapering common corks." Cutting tools that are "toothed within" are made with "holes, slits, or perforations in the same for the dust to fly out."

The patentee claims also an apparatus "for cutting corks of a taper form in the first instance out of single pieces." It is composed principally of (1) an outer carriage "capable of moving sideways;" (2) an inner carriage "which moves lengthways;" (3) a lever for moving the inner carriage; (4) a "middle piece or plug," which "ends in a cylinder" and pushes the cork forward against the cutting tool; and (5) a lever which compresses the cork. The cork "is higher in its thickness than the depth of the groove," and the face of the lever "is sloped so as to press most upon the part of the cork farthest from the cutting tool." The action of the apparatus is described.

He claims, moreover, a "concave grinder;" it is made with hollowed grindstones for smoothing the surface of corks.

[Printed, 6d. Drawing. See Rolls Chapel Reports, 8th Report, p. 83.]

A.D. 1813, April 13.—N° 3680.

PLINTH, CHARLES.—"Improvements in the construction of a vessel, machine, cylinder, reservoir, or fountain (which I denominate 'the Regency portable fountain'), used in the manufacture of water simply impregnated with fixed air or carbonic acid, and of artificial, mineral, and soda waters, and in the delivery of the same therefrom, and also in the delivery of cyder, perry, and other liquids." The fountain in which the liquids are made is constructed "separately and distinctly" from the "air pump and other vessel, matters, and things;" it is connected with the air pump "by means of a thimble joint" or other means and a "perforated stopping piece," so that it may be readily removed "as soon as the impregnation shall or may have been completed."

Instead of bottling the liquids "by or from a cock in the usual manner," the patentee uses "a cock or other perforated stop-

"ping piece screwed, fixed, or applied in the upper part" of the fountain, and terminating within the fountain in a "tube continued nearly as far as the opposite internal surface thereof and open only at the lower end." To the outer end of the cock he joins "a nozzle, adjutage, or tube" (with a cock attached thereto) of such form as shall "conveniently deliver the said impregnated fluid into glasses or other vessels."

Cyder, perry, porter, ale, &c. is delivered from the fountain "by the introduction of fixed air or carbonic acid gas," which "operates by its pressure" in the same manner as in the impregnated waters.

[Printed, 4d. No Drawings. See Repertory of Arts, vol. 28 (*second series*), p. 10; Rolls Chapel Reports, 8th Report, p. 96.]

A.D. 1814, March 12.—N<sup>o</sup> 3788.

STEERS, EDWARD.—"A method of rendering the stoppers of bottles, jars, &c. air-tight." The patentee applies a screw, "whereby the stopper is so forcibly pressed down that if a piece of bladder or oil'd skin, or other fit material, be placed between it and the bottle, the passage of air is completely prevented."

The piece which carries the screw is made with arms, between which the neck of the bottle or jar passes, and the arms may be made to open and close by means of side screws. Or the piece may be made in the shape of "a box with a screw passing through its top," and with or without an opening "for the purpose of adjusting the screw to the stopper."

It is an advantage to have the end of the screw "made concave," and "to turn upon a pin," so that when the upper part is turned the lower part will not turn.

[Printed, 6d. Drawing. See Repertory of Arts, vol. 26 (*second series*), p. 1; Rolls Chapel Reports, 8th Report, p. 101.]

A.D. 1814, April 27.—N<sup>o</sup> 3805.

GRANT, DAVID.—"A pump or apparatus for drawing-off soda water and other liquids impregnated with fixed air." The object of this invention is the drawing-off soda water, &c. (for immediate use) from a reservoir "less injured in the drawing-off than by any other method hitherto in practice."

The patentee connects an "intermediate vessel or measure" to the reservoir by means of two tubes, one from the top of the reservoir and entering the measure near its top, the other from

the bottom of the reservoir and entering the measure near its bottom; each tube is provided with a stop-cock near the measure. On the top of the measure is a cock opening into the air, and on the side opposite the lower stop-cock is one opening "into the nozzle or spout for running off."

Operation:—The other cocks being shut, the upper tube cock is opened, admitting air from the top of the reservoir, "by which the measure is charged with the whole pressure sustained by the reservoir." The lower tube cock is then opened, "when the water enters without agitation or other force than that of its own gravity." These two cocks being now shut, the cock on the top of the measure is opened, "by which the extra pressure is let off," and lastly, the fourth cock being opened, the water will flow out at the spout.

"In practice" the patentee uses "only one cock perforated in such manner as that by a quarter turn of the stopper the operation of filling the measure is performed, and by returning that quarter the measure is emptied." The cock has "three openings for the transmission of the water;" the stopper is also "pierced with three holes, one from the top, one from the under side, and one behind," at right angles to one another (as are also the openings of the cock), equidistant, and all meeting in the centre. The arrangement and the method of working this modification are described in the specification.

The patentee adds that the arrangements for carrying out his invention "admit of great variety."

[Printed, &c. Drawing.]

A.D. 1815, December 9.—N<sup>o</sup> 3967.

REDMUND, DAVID.—"A new or improved machine for the manufacture of corks and bungs." This invention relates to the manufacture of the cutting tool, which is so shaped as to present its edge "in a circular form to the cork bark." The tool is made from a piece of sheet steel, which is cut into such a shape that when the tool is ready for use the fore part is conical, the middle part two arms "either straight or a continuance" of the cone, and the hind part a ring cut with a male screw for screwing it into a breach. A "spiral opening" is made down one side of the cone, and the cutting edge is shaped so as "to make it present an inclined edge to the cork bark."

When the tool has been worked through the cork bark, "the box or groove containing the cork bark is drawn back, and the finished cork or bung is left in the conical part." Each cork or bung as it is cut presses forward the one in the cone into the space between the arms, whence it drops out or "may be made to do so by a slight touch of a finger."

The ring may be fitted into the breech in any suitable way.

[Printed, 6d. Drawing. See Rolls Chapel Reports, 8th Report, p. 111.]

A.D. 1817, May 17.—N° 4120.

THOMSON, ARCHIBALD.—"Machine for cutting corks."

[No Specification enrolled.]

A.D. 1819, January 6.—N° 4327.

CARTER, WILLIAM.—"Improved methods of preparing the cork bark usually employed in the manufacture of corks." The object of this invention is to have the corks (when manufactured) "all whites." The patentee cuts the cork bark into slices, takes off the black or porous portion (by preference with a flat-surfaced circular rasp put into rapid motion by a steam engine" or other power), covers the surfaces of two or more slices with a suitable cement, unites them, and keeps them under strong pressure until the cement is dry.

[Printed, 4d. No Drawings. See Repertory of Arts, vol. 36 (second series), p. 135; Rolls Chapel Reports, 8th Report, p. 181.]

A.D. 1819, May 15.—N° 4370.

THOMSON, SARAH.—(*A communication from Archibald Thomson and Alexander Thomson.*)—"A machine for cutting corks." Three machines are employed; the first cuts the cork into strips; the second cuts the strips into squares; the third rounds the squares. The operations are performed by means of circular revolving knives screwed on to plates or flanges which are mounted on the same shafts or axles as fast and loose pulleys.

In the first, a slide carrying a sheet of cork advances in "a dovetailed frame and carriage" to the knife. On the bottom of the slide is a rack which is connected by wheelwork to a pinion fixed on the knife-and-pulley shaft. There is also a suitably arranged "pressing lever" fastened by a ratchet "at the necessary height."

In the second, a lever "alternately rises and falls by means of a crank and second lever, so that as the knife revolves and the lever rises, that part of the cork strip which projects over the lever and beyond the knife is cut off," the size being regulated by a set screw and guide.

In the third, the chief novelty is a "revolving conductor," in which the square pieces are fixed between studs on whose tops are "small flanges with spikes to fasten the squares." A lever presses the top studs into the squares, and "six inclined planes" lift the lever above the studs as the conductor revolves. A screw and ring fitted on the conductor axle give "the necessary angle to the revolving conductor, and consequently to the corks."

The various connecting gear required in the machines is detailed in the specification.

[Printed, 8d. Drawings. See London Journal (*Newton's*), vol. 1, p. 28; Rolls Chapel Reports, 8th Report, p. 133.]

A.D. 1821, March 3.—N° 4540. (\* \*)

COOPER, ROBERT BURTON.—"Certain improvements on, or a substitute for stoppers, covers, or lids, such as are used for bottles, tobacco and snuff boxes, inkholders, and various other articles requiring stoppers, covers, or lids."

The invention is described at length in its application to an inkholder. The lid is made of "three parallel plates which slide round upon a common centre pin or pivot, the upper and lower plates being so connected by means of squares upon the centre pins as to move together while the middle plate remains stationary." Through these three plates corresponding and coinciding apertures are made for the purpose "of gaining access to the interior of the bottle or other vessel, which access becomes closed, and the interior of the vessel secured air and water-tight by the two moveable plates sliding round horizontally." This horizontal motion is produced by means of two knobs on the top plate, from the under side of which a small pin projects and works in a groove on the upper side of the middle plate "by way of stop." The under side of the middle plate "has a groove all round, with a female screw in its rim for the purpose of attaching the middle plate to a rim with a male screw on the neck of the bottle." The under plate has "both sides alike coated with tin or lead to prevent corrosion." "The surfaces of the three plates which come in contact are ground

means of a screw cap or by a spring catch, till the collar becomes compressed and the stopper thereby rendered air tight. The drawings show the applications of this invention to ink and other bottles.

Secondly, in forming "elastic plugs or stoppers for bottles and other vessels," "by covering ordinary corks with a thin coat of caoutchouc, or by cutting solid caoutchouc into cylindrical pieces." A thin sheet of caoutchouc is drawn over the bottom and sides of the cork and confined at the top by a metal cap and a wire and screw introduced to make the whole fast; or the caoutchouc itself may be cut into a cylindrical form, having two caps or end pieces, attached by means of a wire passed through the middle, with a thread upon the wire screwing into the lower cap. On screwing the caps closer together the stopper is enlarged in its diameter by means of the end pressure.

[Printed, 6d. Drawings. See Repertory of Arts, vol. 3 (*third series*), p. 301; London Journal (*Newton's*), vol. 12, p. 119; Register of Arts and Sciences, vol. 1 (*new series*), p. 100; and Engineers' and Mechanics' Encyclopædia, vol. 1, p. 237.]

A.D. 1826, April 28.—N<sup>o</sup> 5347.

ROWBOTHAM, JAMES, and LLOYD, ROBERT.—"Method of preparing, forming, uniting, combining, or putting together a certain material, substance, or thing, or certain materials, substances, or things, for the purpose of being made into hats, caps, bonnets, cloaks, coats, trowsers, and for wearing apparel in general, and various other purposes." The material is cork. Pieces of cork are cut into slices or strips "varying from one inch or less to twenty or more inches long, and from one sixteenth of an inch or less to one quarter of an inch or more in thickness and from one sixteenth of an inch or less to one inch or more in width." These strips are either plaited together or they are woven into a warp "made of thread spun or twisted from hemp, flax, cotton, wool, hair, silk, or any other fit and proper fibrous material." With the cork plait or the "cork cloth or fabric" and sheets of cork the articles mentioned in the title are made wholly or in part.

Among the "various other purposes" the patentees mention sheathing the bottoms and sides of vessels, and covering walls or partitions of houses.

[Printed, 4d. No Drawings. See Repertory of Arts, vol. 8 (*third series*), p. 660; London Journal (*Newton's*), vol. 13, p. 183.]

A.D. 1826, July 24.—N° 5392. (\* \*)

JOHNSTON, WILLIAM. — "Certain improvements on ink-holders," namely, inkstands and fountain-pens. With the chamber of the inkstand, which may be made of any metal or other convenient material, and with the interior coated if necessary with a glazing or japan, a cup communicates by a tube furnished with a stop-cock and lever. A "top piece" screwing into the chamber and having an air hole in one side, contains a rose-headed stop-cock extending its whole length, with a "small channel" drilled upwards through its middle and turning round so as to be brought opposite to the air hole when required. Instead of a stop-cock the top piece may be furnished with a piston or plunger fitted air-tight, in which case air is admitted to the chamber "by a small passage extending a short distance up the top piece, and then turning round." Ink flows into the cup when the stop-cock in the tube is turned, and, if necessary, the rosehead is moved round until the orifice of the small channel is opposite to the air hole, or when the top piece is unscrewed (if there be no upper stop-cock) "until the air passage opens under the collar." To withdraw the ink from the cup "the passages must be opened and the vessel tilted." Again the raising or depressing of the piston will cause the ink to flow back into the chamber or force it thence into the cup.

The second part of this invention does not relate to this series of Abridgments.

[Printed, 8d. Drawing. See London Journal (*Newton's*), vol. 12, p. 246.]

A.D. 1830, June 3.—N° 5939.

BASS, JOHN HOLMES. — "Improvements in machinery for cutting corks and bungs." The machine described in the specification will cut corks and bungs out of square pieces of cork, "either into round or into oval forms as may be required."

The framing is of cast-iron; it consists of two vertical sides, which are united by a cross at the back, by a cross bridge in front, by a horizontal platform near the upper part, and by a "horizontal cross box" at the back "near the highest part."

The machine is set in motion by a treadle. A horizontal axle extends all across the machine and carries "several wheels and cams;" the latter acting on levers and sliding bolts, "communicate the necessary alternating motions to the different

"moving parts." Each revolution of the axle "causes the said parts to go through all the movements" necessary for cutting off from a square of cork "all the superfluous angles, and out-side so as to leave the same of the proper tapering form for a cork or bung." The square is seized at each end by a clam (a circular chuck) and carried backward by them to the knife. A cam opens and separates the clams; it allows them "to collapse suddenly towards each other at the proper instant by the action of a strong spring," and opens them again "to allow the finished cork to drop out," and to prepare to receive another square. The knife is a blade of steel about 20 inches long and 4 inches broad; it is held fast down by a clamp upon the upper surface of a saddle which slides along a bar, "placed at the upper part of the back of the frame" and capable of being raised or lowered either vertically or diagonally. The edge of the knife is kept sharp "by means of four revolving wheels of wood;" the circumference of the upper two is covered with a paste made of crocus, Turkey stone dust, water, and glue; the circumference of the lower two is "kept smeared with oil."

An oval form is obtained by means of cams "which alternately raise and lower the edge and set the plane of the knife more or less high above the centre line of the clams." This raising or lowering is performed "in due concert with the turning round motion of the cork," and the axle of the clams is "moved backward and forward to and from the edge of the knife" so much as that "the plane of the underside of the knife shall at all times form a tangent to the oval curve which the edge of a knife is proceeding to cut."

A very minute description of all the parts of this machine, of their arrangement, and of the method of working is given in the Specification (17 pages long, and having 4 sheets of drawings annexed.)

The patentee also describes at length "the adjustable feeding machinery with index and pointers;" the same motion, "which adjusts the position in which the square piece of cork shall be presented to be seized by the clams," also adjusts the height of the knife and determines the size to which the cork will be cut.

[Printed, 2s. 8d. Drawings. See London Journal (*Newton's*), vol. 8 (*conjoined series*), p. 164; Register of Arts and Sciences, vol. 5 (*new series*), p. 227.]



A.D. 1831, May 18.—N° 6113.

COOPER, ROBERT BURTON.—“Improvements on a cock or tap applicable to fluids, liquids, and gases, and for applying the said improvement or improvements to other useful purposes.” This invention relates to the employment of “spherical or globular” plugs or valves; it is applicable to jars, decanters, bottles, and inkstands.

One figure in the sheet of drawings represents an earthenware jar:—A metal ring is cemented round the neck; a metal lid is jointed to the ring and made to press upon the stopper by means of a screw which passes through the lid into a projection on the ring. The stopper is of the same material as the jar, spherical, fitted and ground into a seat formed for it in the mouth of the jar, and either separate from the lid or cemented to it.

Another represents a glass cruet having a spherical stopper ground into its seat “by the means usually adopted by glass cutters.” The patentee asserts that such stoppers “fit perfectly tight without the possibility of being set fast.”

Another, “a bottle suitable for holding ether” or other volatile liquid:—The spherical stopper is cemented to a lid which screws on to a metallic ring surrounding the neck of the bottle.

Another, an inkstand with a leaden or other metallic lid, the lower part of which “is ground spherically” and made to fit a seat formed for it in the neck. This arrangement admits of modifications:—The stopper may be of glass cemented to the lid; the lid may screw on; the stopper may be perforated with a hole to coincide with “a similar hole formed through the top of the bottle;” the hole is closed by partially turning the stopper by aid of glass studs thereon.

[Printed, 10*d*. Drawing. See London Journal (*Newton's*), vol. 7 (*conjoined series*), p. 86; Mechanics' Magazine, vol. 20, pp. 181, 243, 288, and vol. 22, p. 201; Register of Arts and Sciences, vol. 6 (*new series*), p. 283.]

A.D. 1833, December 11.—N° 6523.

WISKER, JOHN.—“Improvements in machinery or apparatus for grinding covers or stoppers for jars, bottles, and other vessels made of china, stone, or other earthenware.” By aid of this machinery “a series of stoppers” (twelve or more) may be ground at once. A framing carries the various parts, and a drum fixed on the main shaft receives motion by means of a strap from any first mover. The shaft carries a bevelled toothed

wheel, which gears into other toothed wheels, and these turn the wheels which drive the spindles that carry the stoppers. Each spindle consists of two parts; the upper part is a rod formed with a hook at its upper end, whereby it is connected to an eye at the lower end of the axle of its wheel, thus allowing a degree of play to the spindle; the lower part is a sliding tube retained on and turning with the upper part by means of a slot and stud. The tube is formed with slits for holding the stopper. The jars, &c., are held on "a suspended platform," whereon are uprights notched for the reception of triangular shelves, so that jars of different sizes may be placed thereon, and each jar is held securely by a screw "at the top of each upright." The platform is suspended by four chains, "by which it is capable of swinging" when actuated by a crank connected to a shaft which carries a driving pulley, the pulley receiving motion from an endless gut band that passes round it, round guide pulleys, and round a pulley on the outer end of the main shaft. The arrangement for "the crank movement" is fully described. A tub containing water has "a plug at bottom to regulate the flow," and each jar is supplied with water from a trough descending from the tub.

The foregoing arrangement is for grinding stoppers of a spherical form; for grinding conical stoppers the spindle rods "are affixed to the shafts," the spindle tubes have each a projection by which the stopper "is occasionally raised," and the platform "is a fixture." The raising is effected by a jointed lever acted upon by projections on the driving pulley.

In both grindings "a small quantity of sand" is to be placed in the neck of the jar. The patentee finishes off "with a small quantity of emery."

[Printed, 1s. Drawings. See London Journal (*Newton's*), vol. 14 (*conjoined series*), p. 333.]

A.D. 1834, August 23.—N<sup>o</sup> 6664.

THOMSON, KEITH NORMAN.—"Improvements in machinery for cutting or making corks and bungs." The claims to novelty in this machine are (1) apparatus for "regulating the position of the square or block previous to its being cut;" (2) a method of moving the circular cutter to or from the cork, "in order to regulate the cut and to remove defects from the cork when they appear." The cutter is fixed on a revolving shaft, which receives motion by means of a pulley and band

driven by steam or other power. On the shaft is another pulley, whose band sets in motion a bottom shaft, and this again by means of a pulley at one end and a band gives motion to a middle shaft whereon is fixed a worm. The worm is in gear with a pinion at the bottom of each of "six lower spindles which pass through holes in "two lower plates." Similar spindles pass through holes in two "upper plates;" the spindles and their plates form "a k reel" which moves upon a spindle fixed to the framework by screws. "Any degree of obliquity can be given to "the k reel" by means of the screws and a staple suitably arranged. At the top of the k reel are "six curved inclined "planes" which move the k reel when they are acted on by a lever or handle jointed to the spindle. A stop receives the other end of the handle while the cork is being cut, and a steel spring falling into a notch in one of the lower plates holds the k reel in its proper position during the operation. The square is placed "exactly in the centre of the spindles;" it rests on a sliding plate provided with a stop, a set screw, and a gauge. The action of the machine is described.

The arrangement of the knife-shaft enables the workman "to "remove defects which appear upon the surface of the cork after "it is first formed or shaped:"—A lever, screw, and grooved roller are so placed at one end of the shaft that by turning the roller one way the shaft (and with it the knife) is pressed towards the k reel. On turning the roller "the reverse way" a weighted lever, connected by a crank to the other end of the shaft, forces the shaft and cutter into their former position "ready to operate "upon the next square."

[Printed, 10d. Drawing. See London Journal (*Newton's*), vol. 13 (*conjoined series*), p. 167.]

A.D. 1835, April 14.—N<sup>o</sup> 6811.

PARKER, SAMUEL.—"An improved metallic air and water stop "and stopper." This invention consists in "the application of "a circular margin or border of soft metal around the aperture "which is to be stopped, with a prominent circular rim of hard "metal at the end of the stopper, which rim is to be pressed in "contact with the margin of the aperture, in order that the stop "to the passage of air or water may be caused by the indentation "and impression of the hard metal into the soft metal." The

invention is applicable to bottle stoppers, vent-pegs, taps, and valves.

The neck of the bottle is cut with a screw thread on the outside for the reception of a cap. The cap has a disc or ring of soft metal within it, and the border round the mouth of the bottle "is a sharp prominent rim of hard metal."

Vent-pegs are composed of a tapering socket with a screw thread outside and inside, and a hollow screw stopper "with small pin-holes branching sideways therefrom." A surface of soft metal is applied around the shoulder of the stopper, and the border around the orifice of the socket is formed with a prominent rim.

The patentee describes the construction of several taps on the foregoing principle, adding that they "are no part of my invention, excepting inasmuch as they are constructed with circular faces of soft metal and prominent rims of hard metal."

In many cases it matters not to which surface the soft metal or the rim is applied.

[Printed, 10d. Drawing.]

A.D. 1836, March 8.—N<sup>o</sup> 7026. (\* \*)

LAWRENCE, GEORGE.—A certain improvement in the screws used in fastening the mouths of mounted inkstands, bottles, jars, &c. The invention claimed is that of an improved construction of the screw fastenings, that is, in placing the screws which tighten the cover, together with the cover itself, in a separate frame attached to the mounting "by a hinge and a simple catch fastening or otherwise."

The invention is described as applied to an inkstand.

On the top of the inkstand is the mounting, having a hinge at one end, and at the other a catch fastened to it by a pin and hinge joint; a screw frame with a female screw round its inside, and having at one end "projecting ears or pieces," is attached at the other end by the hinge to the mounting. The screw frame is surmounted by the top which has a male screw on the outside. When the cover is put down, "the catch is to be passed over and between the projecting ears," and the screw, which "from being of a large diameter" requires "to be turned on by part of a revolution," acting on the frame, the "curved or inclined shape" of the ears causes the catch "to turn inwards a little"

and securely fastens it. "As the male screw does not require at any time to be removed from out the female screw," a small pin or stud placed in either the frame or male screw will prevent its being turned round more than is necessary. "The male screw may be formed on the outside of the screw frame and the female screw within the top," and the screw frame may be connected to the mounting by "simple hook or catch fastenings," or "springs which will yield to the screw frame as the cover is pressed down."

[Printed, 8d. Drawing. See London Journal (*Newton's*), vol. 8 (*conjoined series*), p. 229; Rolls Chapel Reports, 7th Report, p. 167.]

A.D. 1837, March 28.—No 7333.

STEPHENS, HENRY.—"Improvements in inkstands or ink-holders, and in pens for writing." This invention, as regards inkstands, consists in an improved stopper of the kind "commonly called spigot and faucet." The opening to the interior of the ink vessel "is formed at one side of the plug or spigot instead of through the middle thereof," and the opening "can be closed at pleasure by turning the plug or spigot." The spigot may be made of glass, earthenware, or other suitable material, and may be placed horizontally, vertically, or at any angle, provided that the aperture in the ink vessel to admit the spigot and the pen correspond thereto.

[Printed, 8d. Drawing. See London Journal (*Newton's*), vol. 4 (*conjoined series*), p. 183; Rolls Chapel Reports, 7th Report, p. 185.]

A.D. 1838, June 23.—No 7702.

LARKIN, NATHANIEL JOHN.—"Improvements in machinery for cutting corks and bungs." The "combination of mechanical parts" first described is for "cutting corks and bungs into the circular figure required;" a second combination is for "finishing corks at their two ends."

1. The main shaft derives rotary motion from a steam engine or other power; on it is fixed a cog wheel, which by its connection with a suitably arranged train of wheels turns a cog wheel on the axle of the cutter. The cutter is "a circular plate of steel brought to a fine cutting edge at its outer circumference," and held "steady and correct in its action" between two bosses or plates. "An important feature" of this invention is giving the cutting edge only "such a velocity that its cut shall be efficient."

"with as little waste of power as possible," and its arrangement is such that the cutting edge does not pass through a space of more than "200 inches in the act of cutting a single cork." The edge is kept sharp by means of two bars of hardened steel, one on each side, against which it "constantly rubs," two files or sharpening stones, one on each side, pressed against it by springs, and two pieces of wood, one on each side, borne up against it by springs and occasionally moistened with oil. The cutter is capable of adjustment; it can be set "up to or away from the cork," or it can be "moved laterally" by acting on its axle with screws; the arrangement of the axle is described. The portions of cork "are placed on revolving holders," usually six in number; these are carried by a revolving axle, which receives motion through a train of wheels geared to another cog wheel on the main shaft. Catches acted upon by a cam retain the revolving axle "in a stationary position so long as the operation of cutting" is going on. The holders consist each of two spindles carried by plates fixed on the revolving axle; on the surfaces of each are "radial teeth;" the upper ones can be raised or lowered for the introduction, removal, or holding of the portions of cork. On each of the upper spindles is a coiled spring; forked springs also tend to force the upper spindles downwards.

2. On the main shaft are two circular cutters, which can be adjusted with respect to distance from each other by screws and nuts. On the shaft is a cog wheel geared to a train of wheels, the last of which has teeth formed "to receive a cork between each two." The corks roll down an inclined trough and are carried by the wheel to the knives. "When cut off, the corks will be carried round between the two knives," and be forced from between them by a projecting plate.

The Specification contains a very full description of each machine, particularly of the first,

[Printed, 2s. 6d. Drawings.]

A.D. 1838, August 3.—N<sup>o</sup> 7761.

LUND, THOMAS.—"Improvements in extracting corks from wine and other bottles with steadiness, facility, and safety." This invention relates first, "to an apparatus for holding bottles combined with a corkscrew," and secondly "to the application

“ of springs to corkscrews ” for the purpose of holding the upper end of the neck of the bottle “ correctly during the penetration of the screw into the cork.”

1. A bar, bent at its upper end for carrying a corkscrew, is made with a knob or foot at its lower end, with two feet higher up and so situate that “ the elevation of the upper end of the bar is such as to retain the bottle at such an angle as not to allow the wine or other liquid to flow out when the cork is drawn,” and with teeth on its under side. A bottle holder, usually of sheet iron and lined with leather, has two slides by means of which it slides along the bar “ in order to place a bottle in the holder and to slide it up to a proper position for the corkscrew.” The neck of the bottle enters a socket affixed to the bar. Connected to the upper slide is a spring catch which has at all times a tendency to enter the teeth; it is pressed out by a finger piece.

When the bottle is in position the handle of the corkscrew is turned; “ the screw will enter the cork, and continued motion will cause the screw to withdraw the cork as is well understood in using corkscrews of similar construction.”

2. Springs of tempered steel are affixed to the lower part of the socket of the corkscrew frame; they are “ slid on to the neck of the bottle, which they will hold and retain the cork-screw correctly.”

One figure in the annexed sheet of drawings shows a knife (provided with a brush) for cutting off the tops of corks previously to their being drawn; another a table for a butler’s pantry or a wine cellar “ with a proper trough or tray for receiving bottles.”

[Printed, 6d. Drawing. See Repertory of Arts, vol. 12 (*new series*), p. 154; London Journal (*Newton’s*), vol. 15 (*conjoined series*), p. 175.]

A.D. 1838, October 17.—N<sup>o</sup> 7832.

BROCKEDON, WILLIAM.—“ A combination of known materials forming a substitute for corks and bungs.” The materials are fibrous substances (by preference such as are capable of felting) and caoutchouc. The substances are “ felted in a roll of the diameter and length required and to the degree of hardness which will leave the stoppers sufficiently soft and elastic.” The roll is cut into lengths for stoppers, and each length is rubbed over with caoutchouc in solution. When the coating has hardened

by evaporation of the solvent, a very thin sheet of india-rubber (coated on one side with solution of caoutchouc) is brought round the length, and the edges are joined. Other portions of sheet india-rubber are applied to the ends of the length, and the projecting parts being cut true to the sides, the stopper is complete.

The sheet india-rubber may be wrapped round the roll before it is cut into lengths.

As these stoppers "are so elastic and fit so air-tight," it is recommended to place within the neck of the bottle (during the process of corking) "a small wire with a longitudinal groove in it to allow the air to escape."

"Flat stoppers" (to cover the mouths of bottles) are made by cutting out portions of felt or woven fabric of the size desired and coating them on the inner side with india-rubber.

[Printed, 4d. No Drawings. See Repertory of Arts, vol. 18 (*new series*), p. 31; London Journal (*Newton's*), vol. 19 (*conjoined series*), p. 334.]

A.D. 1838, December 6.—No 7899.

**BERRY, MILES.**—(*A communication.*)—"Improvements in the means of and apparatus for manufacturing gaseous liquids, and for filling bottles and other vessels used for holding the same, and retaining the contents therein and emptying the same when required." The patentee describes an apparatus for filling bottles and corking them tight "without permitting the gas to escape." It consists of a standard carrying (1) a bottle-holder which is raised or lowered by a treadle, (2) a copper tube through which the cork passes, (3) a lever for pressing down the cork into the bottle, (4) a washer of caoutchouc or leather against which the mouth of the bottle presses, (5) two cocks which communicate each by means of a leaden pipe, "with one of the saturating cylinders" of the manufacturing apparatus.

The mouth of the bottle being pressed against the washer, and a cork being put into the tube, one of the cocks is opened "to establish in the inside of the bottle the same pressure as in the cylinder." The other cock being then opened, the liquid runs into the bottle, the air ascends and returns into "the upper part of the cylinder," and the cork is driven into the bottle neck by the lever. The cork is then secured by a crossed string or wire.

He describes also an apparatus by means of which gaseous liquids "may be introduced and emitted at pleasure" from a vase:—The upper part is provided with (1) a lever which "has internally



"two teeth;" these "raise a piston which is pressed down by a coiled spring;" (2) a spout "of a conical form;" (3) an aperture "closed by an iron stopper" for allowing the air contained in the vase to escape; (4) a screw for regulating the tension of the spring; (5) a glass tube inside the vase "secured in its upper part with sealing wax to the neck of the vase for the purpose of causing the liquid to enter and escape by this channel."

To introduce liquid the mouth of the spout is put into "a conical tube communicating with the cylinder," the lever is depressed, and the cock of the cylinder is opened. The liquid escapes also through the spout "by pressing on the lever."

[Printed, 10d. Drawing. See London Journal (*Newton's*) vol. 17 (*conjoined series*), p. 26.]

A.D. 1839, July 2.—N<sup>o</sup> 8139.

OSBORNE, CHARLES.—"Improvements in the construction of corkscrews." The improvements consist in the application of springs to corkscrews "for the purpose of starting or drawing out the cork a short distance from the neck of the bottle" without "exerting the physical force necessary with a common corkscrew."

"A disc or cap plate" turns freely on the stem of the corkscrew, and below it is a tube which acts as a washer or collar. The plate is connected by bow springs to a conical ring "intended to fit on to the nozzle of the bottle."

Modification :—The nozzle and plate are connected by two or more rods. Above the plate is another plate "which has a collar or rim working against its upper side," and between the plates "are placed one or more open coiled springs."

In either arrangement the springs will be compressed as the worm is introduced into the cork, and their elastic force will "overcome the friction of contact between the cork and the bottle, when the cork will be started and can easily be drawn."

Sometimes a contrivance is added for withdrawing the cork from the worm. The worm "is continued higher up" the stem "and a block" having a hollow screw within it is placed so as to "work upon the worm." Two ears extend from the block, pierced with eyes which slide upon two upright guides. The guides are fastened at their lower ends to the conical ring; their upper ends pass through the cap plate. If the handle is turned

in the reverse direction to the coil of the worm, the block will slide down and push the cork off.

[Printed, 10d. Drawing. See Repertory of Arts, vol. 13 (*new series*), p. 75; London Journal (*Newton's*), vol. 16 (*conjoined series*), p. 210; Inventors' Advocate, vol. 2, p. 36.]

A.D. 1839, September 26.—N° 8224.

SHRAPNEL, HENRY NEEDHAM SCROPE.—“Improvements in “corkscrews.” The patentee claims the construction of corkscrews acting on two different principles.

1. The handle is jointed at one end so that it can be opened out or folded together, and the part which is always over the stem is pierced with a female screw. The stem is cut with a male screw thread and the stem and worm work through a frame whose lower portion is lined with leather. While the worm is being thrust into the cork the handle is kept shut; then the handle is opened and turned round, thereby causing the stem to rise through the female screw and draw out the cork.

2. On the stem, at the head of the worm, “is a small cylinder, “on the inner surface of which are formed a series of inclined “notches,” and below the cylinder “is a plate which is capable “of turning freely upon the axis of the corkscrew.” Spikes projecting downwards are fastened into the plate. A bolt slides through the plate. When the worm has entered the cork and the spikes “have been forced some distance into the cork,” the cork “will come against the inner side of the bolt” and “force it “into contact with one of the inclined notches,” thereby locking the plate and causing it to turn with the worm. “The object of “the spikes entering the cork is, when they have sufficiently “entered the cork to turn it round and by turning to loosen it.” The patentee suggests that bottles should be made “with female “screws in the neck.”

[Printed, 6d. Drawing. See Repertory of Arts, vol. 14 (*new series*), p. 23; London Journal (*Newton's*), vol. 21 (*conjoined series*), p. 22; Mechanics' Magazine, vol. 34, p. 273; Inventors' Advocate, vol. 2, p. 212.]

A.D. 1840, January 31.—N° 8369.

BROCKEDON, WILLIAM.—“Improvements in the means of “retaining fluids in bottles.” Discs or capsules are fastened on the tops of the stoppers. They are usually made of iron tinned; circular blanks are cut out of a sheet; they are then “dished or “hollowed and struck into their form in a die by the fly press

"or other convenient means." The discs have either grooves across them in which the wires lie, or bosses or ridges raised on them which serve as guides to the wires.

[Printed, 6d. Drawing. See Repertory of Arts, vol. 18 (*new series*), p. 26; London Journal (*Newton's*), vol. 19 (*conjoined series*), p. 336; Inventors' Advocate, vol. 3, p. 84.]

A.D. 1840, February 22.—N° 8395.

CUTLER, JOB, and HANCOCK, THOMAS GREGORY.—"An improved method of cutting corks and constructing the necks of bottles." The cutters are of tempered steel, hollow, conical, or cylindrical in shape, made with a slanting opening in one side and a square hole at the inner end, which "passing on to a square end" of a hollow spindle is fastened thereon by a screw nut. The edges of the opening are sharpened, so that as the cutter "revolves against the cork," it cuts away the cork "to the figure of the interior" of the cutter, "the portion of cork cut away from the cork within passing through the opening." Sometimes the cutting edge of the cutter is serrated, and the opening is straight. There are two cutters on each spindle, one on each end, and inside each spindle is a sliding rod carrying a head at each end; "the object of this rod is to force out the cork which has been produced by one cutter during the time that a cork is being cut at the other end of the spindle by the other cutter."

Two rows (an upper and a lower one) of spindles and cutters turn in bearings fixed to the bed plate of the machine. Each spindle has a groove round it, "by means of which an endless band or cord causes it to revolve." The ordinary arrangement of revolving shafts, pulleys, bands, &c. is employed for giving motion to the spindles. The cork holders are made with openings for the entrance of the cutters, with moveable top and side for admission of the cork to be cut, and (when the cork is previously cut up into squares) with partitions; they are affixed to a sliding frame by spring catches. The sliding frame is moved to and fro by means of a screw which turns in bearings on the bed plate, and by aid of a handle the workman "turns the screw first in one direction, then in the other."

[Printed, 1s. 6d. Drawings. See Repertory of Arts, vol. 16 (*new series*), p. 204; Mechanics' Magazine, vol. 33, p. 254; Inventors' Advocate, vol. 3, p. 131.]

A.D. 1840, March 7.—N° 8421.

TYLER, HAYWARD.—“Improvements in machinery or apparatus for impregnating liquids with gas, including bottles for retaining, keeping, and preserving liquids so impregnated, also in the manner of filling and closing such bottles.” These bottles are made “with an additional small neck at the bottom or opposite end to that where the usual neck is made.” The small neck has “a very small passage into the bottle;” its orifice “is adapted to be stopped by a small cork;” its use is for filling the bottle, the patentee asserting that such filling “can be done with less loss of gas than usually takes place in filling at the ordinary large necks.”

The large neck being stopped with a cork tied in and secured with wire, the bottle is held in an inverted position, and the small neck is applied to a spout of the manufacturing apparatus, “which spout is adapted to fit in the interior of the neck at the outer orifice thereof.” When the bottle is filled, a cork is driven into the neck, then tied, and fastened with wire.

[Printed, 2s. 4d. Drawings. See London Journal (*Newton's*), vol. 24 (*conjoined series*), p. 23; *Inventors' Advocate*, vol. 3, p. 179.]

A.D. 1840, June 2.—N° 8532. (\* \*)

DAIN, CHRISTOPHER.—“Certain improvements in the construction of vessels for containing and supplying ink and other fluids.” The patentee limits his claim of invention “to the introduction of a valve or stop-cock placed between a reservoir for the ink or other fluid and the vessel or cistern from which it is taken to be used.” The inkstand is a reservoir of glass having a tubular neck which communicates with a small cistern or dipping cup. There are two holes, one “about midway in the neck,” the other near the top of the reservoir. The inkstand is cemented on to a stand of metal or other material, and further secured thereto by a “metallic saddle piece,” the arch of which holds down the neck, being fixed by screws “that pass through a plate of a collar,” and are “tapped into the stand.” “From the centre of the arch there springs an arched bracket,” having at its upper extremity a circular collar bored out in the middle, through which works a screw plug, having at its lower end a piece of cork fitting the hole near the top of the reservoir. On

the plug is a "cap piece, containing within it a revolving piece" square at the top. Through the hole in the neck passes a stop-cock or ink valve of cork, affixed to which is a brass plug, "square" at its lower end, and having at its upper end a six-threaded "screw," which works in a socket squared at the top. The socket is held in its place by two collars, one on each side, and the plug "is prevented from turning round by its square part" working in the square hole of the lower collar. A funnel surmounts the upper collar, and a key fits on to both squares. To charge the reservoir, remove the funnel and apparatus on the top forming the air valve, screw the funnel to a small pipe, which is flattened on one side to allow egress to the air, and introduce the pipe into the hole. To let ink pass into the dipping cup, raise the air valve by turning the square of the plug with the key, and do the same to the cork valve of the ink plug. The ink is returned into the reservoir "by opening the valves and" inclining the inkstand." This apparatus may be used for containing fluids that are to be drawn off in small quantities.

[Printed, 6d. Drawing. See London Journal (*Newton's*), vol. 19 (*conjoined series*), p. 31; *Mechanics' Magazine*, vol. 33, p. 588; *Inventors' Advocate*, vol. 4, p. 20.]

A.D. 1840, July 30.—N<sup>o</sup> 8581.

BACHELARD, JOHN LOUIS.—(*A communication*).—"Improvements in the manufacture of beds, mattresses, chairs, sofas, cushions, pads, and other articles of a similar nature." This invention relates to the employment of cork as a stuffing or a partial stuffing. "The refuse cuttings of cork cutters" are used when they can be obtained; these are cut into "fine or" a coarse sawdust fibre "from half an inch to two or more inches long, about one thirtieth of an inch thick, and from an eighth to a twentieth of an inch wide. It is preferable that the fibres be cut" curved by cutting from a curved surface," but where lengths cannot be obtained, the cork should be cut "very small and" similar to sawdust."

The best mode of carrying out the invention is to use "fine cut" fibres of cork as a substratum "and to place thereon a thin covering of horsehair or wool.

[Printed, 4d. No Drawings. See Repertory of Arts, vol. 15 (*new series*), p. 310; London Journal (*Newton's*), vol. 18 (*conjoined series*), p. 128; *Mechanics' Magazine*, vol. 34, p. 140; *Inventors' Advocate*, vol. 4, p. 84.]

A.D. 1841, June 21.—N° 8996. (\* \*)

GAUCI, JOSEPH, and BAIN, ALEXANDER.—“Improvements  
“in inkstands and inkholders.” The invention relates to a mode  
of constructing inkstands in which the ink is supplied to the  
holder or dipping vessel, first, by means of a force pump,  
secondly, by causing “the ink vessel (or part thereof)” to move  
partly round.

In the latter construction the ink vessel is a barrel or cylinder  
so secured in a frame that it is capable of moving partly round in  
it. The barrel has an air-hole near the top, and near the bottom  
a hole through which the ink may flow to and from the holder,  
which forms part of or is affixed to the barrel. For filling or  
using this inkstand the barrel must be turned round so that the  
surface of the holder may be horizontal or nearly so; and the  
ink is withdrawn from the holder by turning the barrel upwards  
until the holder meets a projecting part of the frame which serves  
as a cover to it. Or the barrel may be stationary in the frame,  
and one end only of it “carrying the holder” move round; the  
end is then a metal cap “lined with glass cemented within  
“it,” “the surfaces being ground together in order to make a  
“fluid-tight joint,” and “kept close” by a spring which carries  
the cover of the holder and is screwed to the lower part of the  
frame.

[Printed, 1s. Drawings. See Repertory of Arts, vol. 17 (*new series*), p. 260;  
London Journal (*Newton's*), vol. 21 (*conjoined series*), p. 336; Mechanics  
Magazine, vol. 36, p. 29.]

A.D. 1841, August 21.—N° 9048.

HARVIG, JOHN, and MOREAU, FELIX.—“A new or improved  
“mode or process of cutting or working cork for various pur-  
“poses.” The following is the description of the machine (and  
its action) given in the Specification:—A sheet of cork is put  
between rollers. Circular rollers, “having teeth similar to a rasp  
“or saw, turning rapidly, pare the outside or rind of the sheet of  
“cork in a circular manner.” Blades fixed upon bars and  
“borne by a lever” (called by the patentees “a lozenge”)  
press bars upon the cork. This pressure makes a “scale”  
descend “and carry the apparatus of the lozenges” to circular  
knives or screws “placed underneath or above or at the head of  
“the machine, which divide the cork between the bars.” The

scale re-ascends by means of a spring ; the lozenge "is opened by " hand," and " each bar bears away its square of cork parallel " at distances determined by the length of the opening." Double frames, " placed obliquely for making the corks conical, are moved " one in the other in their grooves," and together in other grooves ; their " forward motion " " to the external frame produces the opening " of " pivots." The scale being " pressed " down by the pressure of the frames " against a " triangle," each piece of cork " introduces itself between the pivots." The returning movement tightens the pivot " against the ends " of the pieces. A transverse bar (magnetized if made to act upon iron pulleys) " and a cat-gut cord fixed to the two extremities surrounding the " pulleys " are " thrown from right to left between the grooves " in the course of the double frames " by two oblique bars ; they make " the triangle turn, and also the pieces of cork, against the " edges " of cutters which are " placed parallel to the grooves," and " cut away the superfluous parts." A rack and pinions may be used instead of the bar and cord. " The continued movement " of the frame carries them against another series " of cutters " placed rather nearer to the axis of the pieces," and " completes the operation." The pivots " are then drawn away," and the corks drop down. The cutters are kept sharpened by suitably arranged " small circular whetstones or files." The machine is set in motion by a crank connected to any motive power.

[Printed, 6d. Drawing.]

A.D. 1841, September 4.—N<sup>o</sup> 9066.

LACHENAL, LOUIS, and VIEYRES, ANTOINE.—" Improve-  
ments in machinery for cutting corks." This invention relates  
" to a mode of arranging and combining mechanical parts,  
(1) into a machine for cutting cork into parallelograms, (2) into a  
machine for rounding the parallelograms.

1. The machine " is so arranged that it is capable of self-  
adjustment, depending on the thickness of cork, and in such  
" manner that, whatever be the thickness of cork fed into the  
" machine, the portion cut off will be squared to that thickness."  
An upright shaft, receiving motion from any power, has fixed  
on it a cog wheel which drives others. On the axle of the last is  
a crank, to which is pinjointed a rod whose other end is attached  
to the under side of a slide. The slide carries a plate, and the

plate a lever "at all times pressed on" by a spring; a screw "regulates the position to which the lever can be forced by that spring." A block of cork, "of a width equal to the length of the intended corks to be made therefrom," is placed between guides and a gauge, and in the movement of the machine it "will be progressively forced up" by a serrated-edged finger pinjointed to the lever, and "successive portions will be cut off" by the first revolving knife. The block is borne forward and is "again cut at the upper and under surfaces by two other rotatory cutters." Circular rubbers of copper or other suitable material, having their surfaces prepared "by having the fine powder of diamond" beaten into them, keep the cutters sharpened.

2. This machine is "in fact two machines, each having similar parts, so that two corks are shaped at the same time;" they are worked together on the same bed plate. A carriage slides on guides; it has "two end castings or cheeks" combined by slotted bars and screws "in order to adjust the distance apart of the two cheeks." The bearings of "rotatory cork-holders" are affixed to the upper surface of the cheeks. The pieces of cork are fed into the machine through "a square pipe" which rises to "about ten feet" above the machine. The lower end of the pipe is connected to a "bent plate" so that it can "move to and fro with the working parts of the machine." The supply is regulated by a wheel "which has several divisions, each to receive a piece of cork." The pieces pass from the wheel into a "receiver" which holds each "in a position for the cork holders to take it." The continued movement of the machine will by means of a projection "force the receiver out of the way, and the cork will be conducted against the knife and be cut."

The foregoing is a mere outline of the machines. The patentees describe at great length every part, its use and arrangement. The description fills ten pages of the specification, and there are eight sheets of drawings annexed to it.

[Printed, 5s. 6d. Drawings. See *Mechanics' Magazine*, vol. 36, p. 285.]

A.D. 1842, March 3.—N° 9273.

HASELER, GEORGE CARTER.—"Improvements in the tops of scent bottles."

This invention may be carried out in either of the following methods:—1. A cover, with a perforated top "to allow the scent



"to escape through when the valve used is opened," is secured to the neck of the bottle. A valve, "made to fit tight on the top of the neck," is jointed to a lever whose short arm "is on the outside of the top." A spring "acts on the lever near the fulcrum and is used to press the valve down tight."

2. The cover "consists of two plates;" one is solid, the other is made with "open parts;" one is fixed, the other is moveable. A spindle "runs through the plates," and a spring binds them together; the spring is below the plates; it acts against a washer and nut screwed on to the spindle. The moveable plate is turned by a knob or ornament, or "by the small ornament in the centre."

[Printed, 6d. Drawing. See Record of Patent Inventions, vol. 1, p. 85.]

A.D. 1842, March 21,—N<sup>o</sup> 9303.

BROCKEDON, WILLIAM.—"Improvements in manufacturing fibrous materials for the cores of stoppers, to be coated with india-rubber, and used for stopping bottles and other vessels." Threads, rovings, or slivers of cotton or wool, or other fibrous substances, sufficient to form the core of the size required, are drawn "through a frame having one, two, or more holes therein, each hole receiving its proportionate quantity for the rope to be made." As the strands pass through the holes, "they are lapped or bound together with a thread strong enough to bear the strain of the corkscrew" when withdrawing a stopper. The separate strands, having been thus separately lapped with thread, are brought together and drawn through another hole of the size required for the cores; and whilst being drawn through they are lapped with a strong thread. "The quantity of fibrous material or threads thus drawn through and lapped with strong thread, and the size of holes required, will depend upon the degree of hardness and diameter required for the stoppers." "The rope or substance thus produced is now in a fit state to be covered with india-rubber in sheet or in solution."

The specification contains a description of the machine which the patentee uses for drawing, lapping, combining and lapping the strands together, and winding the combined strands on a drum, but he does not claim the invention of it. Toothed wheels are keyed on outer revolving tubes in which are tubes that do not revolve and can be replaced by others of larger or smaller size. Each set is provided with a bobbin carrying lapping thread.

The strands are drawn through what may be termed the combining set (consisting also of inner and outer tube, bobbin, and twisted wheel) and thence to the drum.

[Printed, &c. Drawing. See Repertory of Arts, vol. 15 (new series), p. 294 ; Record of Patent Inventions, vol. 1, p. 144.]

A.D. 1842, May 24.—N° 9361.

(BEEVES, WILLIAM.—“Improvements in machinery for cutting “cork.” The first part of this invention relates to a machine “for cutting cylindrical corks;” the second to one “for cutting “circular discs of cork.” The claims to novelty in the first are (1) constructing and applying a tubular cutter such that the corks as they are cut are forced through it or laterally out of it, (2) holding a piece of cork in such manner that it “may protrude beyond “the holding surfaces,” thus “allowing the external surfaces of “cork to shell off,” (3) lubricating and sharpening the cutter. In the second the claim is for cutting discs by means of tubes acting with suitable cutters.

1. The machine is worked by a treadle; at each end of the cranked axle are pulleys which give motion by a band to upper pulleys. On the axle of the upper pulley on the right hand is an eccentric embraced by one end of a rod whose other end is jointed to a ram. The ram moves to and fro along the bed plate, guided on three sides by the bed plate, “a front guide surface,” and a cover fixed thereto, and on the fourth side by a lever whose axis is fixed to the bed plate. By arrangements (which are explained) “the piece of cork, which has been fed into “the machine by the workman,” or dropped into it through a vertical square tube, is held between the front end of the lever and the front guide surface and forced outwards to the cutter by the ram. The cutter is a short tube; the back end is conical and fits into a conical tube which turns in bearings. On the conical tube is fixed one of the upper left-hand pulleys; it has also collars “adjustable by screws for the purpose of moving the “tubular cutter up to the holder as the cutter becomes worn “away.” When the ram goes back a small vessel is arranged to descend, and “fibres, placed at the lower end of the vessel” and saturated with oil contained in it, lubricate the cutter, while a whetstone is borne up to the cutting edge by a spring.

2. The main shaft is turned by a crank handle; on it is a pulley which by means of a band sets in motion other pulleys and bands

and finally two revolving cutters. Cylindrical pieces of cork descend down tubes fixed on a sliding frame which moves to and fro on the table or bed of the machine, being pinjointed to one end of a connecting rod. The rod receives motion from an eccentric on the main shaft. There are "tubes over which the corks are cut, and down which the discs fall into any suitable receiver." The cork descends at the times that the tubes "are moved from" the cutters. The thickness cut off is regulated "by applying washers under the cutters," or by raising the cutters "higher up on their axes," or by raising the axes.

[Printed, 1s. 2d. Drawings. See Repertory of Arts, vol. 1 (*enlarged series*), p. 65; Record of Patent Inventions, vol. 1, p. 314.]

A.D. 1842, August 11.—N<sup>o</sup> 9445.

BETTS, JOHN THOMAS.—(*A communication.*)—"Improvements "in covering and stopping the necks of bottles." The caps employed for this purpose are made of lead or tin, the latter being the more suitable "owing to its strength when very thin." The thickness of the tin is ordinarily from  $\frac{1}{180}$  to  $\frac{1}{160}$  of an inch; for bottles "containing aerated or other liquids offering pressure," from  $\frac{1}{90}$  to  $\frac{1}{100}$  of an inch. The caps are made "by stamping or "by pressure with suitable dies, as is well understood."

The apparatus for securing the cap on the neck of a bottle consists of a frame having on each side a roller turned by a handle and provided with a ratchet and click; on the top a screw with a plate at its lower end; at the bottom a treadle for lifting the clicks; and at a suitable height a platform on which the bottle is placed. A cord is wound round the rollers.

The bottle being placed on the platform, the cord is "slackened "so as to be made to pass round it;" the screw presses the cap closely on to the neck; the cord is tightened; the operator raises the screw, "takes the bottle in his right hand," turns it, and "by pressing it away from him he gradually causes the whole of "the outer surface of the circumference of the metal cap to be "acted on by the pressure of the embracing cord."

"A more simple machine," but "not so convenient for use," consists of a cord fixed to a standard at one end and to a treadle at the other; the cord is kept tight round the cap by pressure on the treadle.

[Printed, 1s. Drawings. See Repertory of Arts, vol. 1, (*enlarged series*), p. 269; Mechanics' Magazine, vol. 64, p. 583.]

A.D. 1842, September 29.—N° 9480.

RAND, JOHN.—“Improvements in making and closing metallic “ collapsable vessels.” The vessels are closed by means of a screw cap. The vessel is made by dies and punches, and during the process the neck is expanded “in a die with a screw cut “ therein,” and thus “a screw will be formed at the outer “ surface of the neck.”

The lower die used in forming the screw cap may be engraved “ so as to produce a milled surface to the external of each cap.” The upper die has “a male screw formed thereon,” so that “the “ metal will be formed into a cap having a female screw formed “ therein.”

[Printed, 10d. Drawing. See Repertory of Arts, vol. 1 (*enlarged series*), p. 321; *Mechanics' Magazine*, vol. 38, p. 488; *Artizan*, vol. 4, p. 100; *Patent Journal*, vol. 1, p. 377.]

A.D. 1843, March 16.—N° 9665.

BETTS, JOHN THOMAS.—(*A communication.*)—“Improvements “ in the manufacture of metal covers for bottles and certain “ other vessels, and in the manufacture of sheet metal for such “ purposes.” The machine employed is arranged for working 13 punches “similar to each other” and “progressively decreas- “ ing in size.” The patentee has found this number “sufficient “ to raise the metal to the greatest extent required for covering “ the necks of bottles;” a smaller number will be necessary for making covers of less depth; the machinery shown is intended for making covers for the necks of champagne bottles.

The machine requires a framing, driving shaft, and fly wheel. On the shaft are two plates, “between which are formed inclined “ guides by which motion is communicated” to a lever, and a friction roller, “which works between the inclined guiding sur- “ faces,” and causes the lever “to move to and fro on its axis.” The other end of the lever is pinjointed to a sliding bar, which at each revolution of the shaft “is moved to and fro a distance “ equal to that from centre to centre of two succeeding dies.” The bar has hinged to it a plate, whereto is connected a second plate by means of other plates. The connecting plates carry scrapers lying each under a punch, “so that each punch in pass- “ ing back is scraped, by which means the raised piece of metal “ thereon is forced off and falls into a cradle.” Each punch has its cradle affixed to the connected plate, and this plate “is caused

“ to rise and fall as well as to move to and fro.” The connection and working of the foregoing parts are fully described.

“ Followers ” slide in bearings ; there is one to each punch and die, except the first and the last “ or cutting die ; ” the piece of metal is held “ between the end of a punch and one of the “ followers as it is forced up into a die and as it is drawn out of “ the die and carried to a cradle ; ” the followers are worked by weighted cords. The arrangement of the dies and punches is fully explained.

If it is desired to mark the end of each cover with a name or device, the follower and punch “ of the die No. 11 ” are to be engraved for that purpose.

Apparatus for “ obtaining sheet metal ” for making covers :— A melting pot is set in a furnace. An opening at the lower portion of the pot is opened and closed by a plate fixed to a lever. The spout moves on a hinge. A plate of iron “ about 40 “ feet long ” receives a thin layer of melted metal from a moveable pot (surrounded by a fire and made to open at the bottom), into which melted metal descends through the spout. The width of the flow, &c., is regulated by projections and stops. The sheet of metal is wound on an axle and thence conveyed to rollers.

[Printed, 4s. 2d. Drawings.]

A.D. 1843, April 20.—N° 9708. (\* \*)

MACINNES, JOHN. — “ Certain improvements in funnels for “ conducting liquids into vessels.”

These improvements consist “ firstly, in applying to funnels an “ air or vent tube, by means of which the air displaced in the “ process of filling a vessel is prevented from obstructing the “ free admission of the liquid ; secondly, in the application of a “ valve as well as the air tube, in order to stop or retain any “ portion of the liquid in the funnel whilst removing it from the “ filled vessel ; and, thirdly, in applying to funnels an air tube “ in conjunction with another tube having a whistle attached, by “ which means warning is given to the operator when the vessel “ is full, or nearly so.”

[Printed, 8d. Drawing. See Repertory of Arts, vol. 5 (*enlarged series*), p. 32 ; London Journal (*Newton's*), vol. 23 (*conjoined series*), p. 329.]

A.D. 1843, June 27.—N° 9805.

BETTS, JOHN THOMAS.—(*A communication.*)—“ Improvements “ in covering and stopping the tops of boxes, jars, pots, and

"other vessels," which have "large openings," and not "necks," as is the case with bottles." Metal caps are employed, and "in some cases the metal covering will be sufficient without "other stoppers." The caps are made "by stamping or by pressure with suitable dies, as is well understood;" the metal preferred is tin, and the ordinary thickness is from  $\frac{1}{180}$  to  $\frac{1}{180}$  of an inch.

The apparatus for fastening the caps is composed of (1) two rollers turned by handles, provided each with a ratchet and a click which can be raised by a treadle, and mounted each on one side of a frame; (2) a screw on the upper part of the frame and having a plate on its lower end; (3) a platform on which the jar, &c. stands. A cord is wound round the rollers.

The jar is placed on the platform; a cap is pressed closely on to its top by the plate, the cord is tightened round its rim, the operator takes the jar in his right hand, "causes it to turn, and "by pressing it away from him he gradually causes the whole of "the outer surface of the circumference of the metal cap to be "acted on by the pressure of the embracing cord."

If the jar, &c. is made without a rim, the cap is fixed on by aid of "two surfaces of india-rubber," by means of which the metal is caused "to take the external form of the vessel." The surfaces are fastened one to a lever, the other to a "fixed bed." Sometimes the patentee uses "dissolved gum on the interior of the "metal caps when fixing them."

[Printed, 1s. 4d. Drawings.]

A.D. 1843, August 24.—N° 9875.

FLETCHER, WILLIAM.—"Improvements for the purpose of "securing corks or substitutes for corks in the mouths of bottles, "or vessels of the nature of bottles, whether made of pottery, "or of pottery of the kind called stoneware, or of glass." The neck of the bottle, &c. is made with two holes, one on each side. The cork passes down the neck so that one portion of it is below the holes; and a pin is thrust through the holes and the cork.

[Printed, 6d. Drawing. See Repertory of Arts, vol. 3 (*enlarged series*), p. 280; London Journal (*Newton's*), vol. 24 (*conjoined series*), p. 432; Mechanics' Magazine, vol. 40, pp. 221 and 349; Engineers' and Architects' Journal, vol. 7, p. 112.]

A.D. 1843, December 8.—N° 9983.

STOCKER, ALEXANDER SOUTHWOOD. — "Improvements in "the manufacture of glass and other vessels, whereby the corks

“ for the same are easily applied and more effectually retained in  
“ their situation where effervescing liquids are used ; also in the  
“ manufacture of articles, and the application of the same to  
“ that part of the vessels in which these improvements consist,  
“ so as to secure the cork ; also in an apparatus for extracting  
“ such corks when required to be released.” 1. Shape of the  
neck and securing the cork therein:—The upper part of the  
neck below the cork is formed “with an expanded or enlarged  
“ portion ” in order “to provide a space in which the gaseous  
“ matter escaping from the liquid has more room or space for  
“ expansion ” than in bottles of the ordinary construction. “ A  
“ counter-sunken indentation ” is made in each side of the  
thickened portion of the neck for the insertion of a pin which  
passes through the cork.

2. Apparatus for withdrawing the corks “from the aforesaid  
“ vessels :”—It is composed of (1) a handle of the form of a  
corkscrew ; (2) an outer tube passing through the handle ; (3) a  
tube sliding within the outer tube and carrying at its lower  
extremity a stop-plate ; (4) a hollow cylindrical rod sliding in the  
inner tube and carrying at its lower end “between jaws formed  
“ thereon ” (5) “ a pair of double-fluked arms,” which move on  
a pin and are formed with “ a short inclined rib ” on “ the inner  
“ side or face of the fluked arms ;” (6) a solid metal rod which  
slides in the hollow rod, forces the arms “to take a position at  
“ right angles to the position ” in which they penetrate the cork,  
and is released from the arms by a coiled spring which acts  
against a circular plate attached to the head of the rod. The  
action is described.

3. A stopper which cannot be withdrawn from a bottle “ but  
“ by the operation of the key thereof :”—The upper portion of  
the stopper has “ a cylindrical hollow space formed in its centre,”  
the lower part of the hollow space being “ of smaller diametral  
“ dimension.” In the cavity “ a branched spring ” is placed,  
whose “ bent extremities ” are thrown “ into corresponding  
“ cavities formed in and through ” the solid lower portion of the  
stopper, and “ under a shoulder or grooved bearing formed in the  
“ neck ” of the bottle. The key consists of a stem with arms  
which press against the shoulders of the spring.

Modifications of all the foregoing are described in the specification.

[Printed, 1s. 4d. Drawings.]

A.D. 1844, April 18.—N° 10,148.

MURDOCH, JAMES.—(*A communication*).—"Improvements in the construction of vessels for holding aerated liquids, and in the means for introducing such liquids into the said vessels and retaining them therein." The bottle is "hermetically sealed at top;" near the bottom is "a short neck" in which is an aperture "for the introduction and discharge of the liquid." By this arrangement "the orifice is always covered by the liquid, and the escape of gas is thereby prevented." A cock is fitted to the neck; it has two passages, one for connecting the bottle to the reservoir, the other connected with the aperture in the neck and with a "rising tube" on whose top a "discharge cock" is fixed. The two passages are open to each other "during the operation of charging," and the communication is closed by a plug. "The air cock" is fixed "between the charging pipe and the cock" (which is fitted to the neck) "in the operation of filling, for the purpose of allowing the escape of the air contained in the bottle."

When the bottle is fully charged, the connecting passage in the cock is closed by the screw plug, and a cap is screwed on.

Sometimes the rising pipe is omitted, and the filling and discharging are effected by the same cock.

Syrup or similar liquid is mixed with the aerated liquid by screwing the base of the vessel containing the syrup to the nozzle of either cock, and by screwing an air pump to the upper part.

Two figures in the annexed drawings "represent a modification of the invention, in which the liquid and the materials for furnishing the gas are separately introduced into the apparatus, and the charging the liquid with gas takes place in the vessel in which the liquid is to be contained."

[Printed, 1s. 3d. Drawings.]

A.D. 1844, May 7.—N° 10,176.

LOACH, JOHN.—"Improvements in corkscrews, which improvement is also applicable to cocks or taps and valves." The worm is a screw made with "a broad sharp-edged thread wound around a slightly tapering and pointed body." The stem has a flange at its lower end; its upper end is attached to a nut, and the nut to the handle. The outer frame or barrel is



made with a shoulder at its lower end where it rests on the mouth of the bottle neck ; it is surmounted by a tube whose internal diameter is such that the flange of the stem passes freely up and down, and the upper part of the tube is contracted by a shoulder. In the barrel is a diaphragm pierced for the free passage of the stem flange and carrying two pointed studs on its under side.

When the worm is driven home into the cork the nut comes into contact with the upper end of the tube and "prevents the further descent of the parts." By continuing to turn the handle the cork is drawn by the worm from the bottle neck. The diaphragm and studs serve to disengage the cork from the worm.

In cocks or taps the plug which shuts and opens the communicating chamber is prevented from rotating by two projections on opposite sides working in grooves in the chamber. "A four-threaded left-handed screw" secured to the plug raises and lowers it by aid of a key.

[Printed, 8d. Drawing. See *London Journal (Newton's)*, vol. 27 (*conjoined series*), p. 418.]

A.D. 1844, May 15.—N° 10,185.

HANCOCK, CHARLES.—"Improvements in cork and other stoppers, and a new composition or substance which may be used as a substitute for and in preference to cork, and a method or methods of manufacturing the said new composition or substance into bungs, stoppers, and other useful articles."

On June 6th, 1851 the patentee filed a "disclaimer and memorandum of alteration," wherein he struck out the words "Improvements in corks and other stoppers and" from the above title, and made sundry alterations in his specification. This abridgement is made from the altered specification.

The substitutes are cork ground to powder, sawdust, gutta percha, and caoutchouc. The gutta percha, by itself or in combination with caoutchouc, is dissolved by any ordinary solvent and mixed with the cork or sawdust. Or the gutta percha may be put in a solid state into a masticating machine, and as much cork or sawdust be thrown in as the plastic mass will readily take up. The mass when thoroughly incorporated is put into large moulds and afterwards cut up into corks, &c.; or it is at once put into moulds of the size and shape of stoppers, &c.

In another the upper part of the neck is formed with a projection, "the under surface or lower edge of which is undercut" to allow the cap "to be forced into it as well as under the projecting ledge."

In another a glass stopper is employed; annular channels are cut on the portion which projects above the mouth as well as on the upper portion of the bottle neck.

Wide-mouthed vessels are made with a bearing shoulder for the reception of a metal ring and with one or more annular channels below the shoulder.

[Printed, *1s. 4d.* Drawings. See *Mechanics' Magazine*, vol. 51, p. 22 and vol. 52, pp. 456 and 516; *Patent Journal*, vol. 8, p. 98, and vol. 9, pp. 123 and 147; *Queen's Bench Reports*, vol. 14, p. 363, and vol. 15, p. 540; *Law Journal* (*Queen's Bench*), vol. 19 (*new series*), p. 531; *Jurist*, vol. 14, pp. 647 and 912.]

A.D. 1845, January 18.—N° 10,479.

MOREAU, FELIX. — "Improvements in the manufacture of corks, and other similar articles made of cork, wood, or other materials, and the application of certain of the refuse matters to various useful purposes, for which they have never heretofore been employed." Sheets of cork are cut with a knife into pieces "of about three inches long and an inch and a quarter square, or any other dimensions according to the size required." The pieces are put into a machine where they are operated upon by a revolving cutter which removes their edges and brings them "into rough cylindrical shapes;" they are then transferred into another machine which reduces them to conical or other form "by grinding their peripheries."

The operating parts of the first machine are mounted on a table. Standards carry a pulley which is driven by any power. The axle of the pulley is hollow and holds a tube ribbed on the inside to prevent the cork "as it is forced through from turning round." The tube is kept in position by a bracket. "A hollow cylindrical cutter" is screwed into the inner end of the hollow axle and "consequently revolves with the pulley;" it consists of "a circular cutting rim" and "four pointed or saw teeth cutters" upon "a clipped ring" which is "affixed on the outside" of the cutter. Two "lateral rollers" revolving "in opposite directions by gear below" carry the piece of cork onward to the cutter. The piece is placed upon a ledge between guides and is pushed forward to the rollers by a plunger "con-

"nected to a lever" and "impelled by a spring." Each piece after passing the cutter enters the tube, and is pushed through it by the following one.

Another machine is described in which there are four cutters, "two of them coincident with each other, in two parallel ranges," and between each pair is a grooved rest for the reception of two pieces of cork which are separated by a plunger at the end of a "sliding cross head." Each motion to and fro of the cross head causes its plungers to force two pieces against two cutters.

The grinding machine :—Two frames slide vertically in standards; they are connected by a cord passed over a pulley so that the rising of the one causes the descent of the other. At the lower edge of the one are sockets "open at their under parts" for the reception of the corks. Two frames slide horizontally, the lower in grooved rails of the standards, the upper in grooves in the lower. On the ends of the upper frame are inclined planes "for the purpose of causing the ascent of the frame which carries the sockets. On the back rail of the lower frame are "pointed brackets" forming "pivots for the corks to turn upon," and in the upper frame are "rotary shafts" with "forked ends" which "take hold of one end of each of the corks and confine them against the opposite point." Each shaft carries a toothed wheel, all of which "take into a transverse worm shaft" mounted on the ends of the upper frame. When all the parts are in proper position and set moving, the corks are "brought into situations coinciding with the centres of the rotary shafts and the pivots; the upper frame is moved forward; the corks are taken hold of by the shafts and pivots; the two frames are fast locked together," and they "are then advanced by the hands of the workman so as to bring the corks up to the grinding apparatus." In doing this the corks will be all projected through the sockets. The grinding apparatus consists of discs of thin plate iron fixed upon a transverse shaft; the grinding surface may be "fine file-cut indentations on the face," or "grinding material attached to the face," of each disc. The shaft can be adjusted by end screws; it is arranged to move at a speed of about 1,500 revolutions per minute, whilst the corks "must be made to turn slowly."

The arrangement of the various parts of the machines is fully described in the specification.

In "a modification of machinery" (described at length) "the

“ rough rectangular pieces of cork may be reduced into proper regular figures without the previous paring or rounding operation.” The principal variation in the machinery consists “ in a means of moving the frame laterally in which the corks are mounted upon rotary spindles for the purpose of first submitting them in their rough state to the operation of coarse filing or rasping surfaces on one side of the rotary discs,” and then “ shifting their positions so that they may be finished by finer filing or grinding surfaces on the other sides of the discs.”

The sockets are “ of a square form with a slit in their under part.”

To remove the charred surfaces from the outsides, a pair of disc cutters may be employed with serrated edges ; they revolve rapidly, and the pieces “ are passed through between them.”

To shape the corks more or less conical, either the axle of the disc cutters is placed “ a slight degree out of parallelism with the sliding frames,” or the frames are caused to “ slide in positions inclined to the faces of the cutters.”

As the corks “ will sometimes retain a fringe or burr upon their edges,” they are put into a cylindrical cage of wire or wicker work ; the cage is made to revolve ; the corks “ will act against each other,” and the fringe will be “ entirely rubbed off.”

[Printed, 2s. Drawings.]

A.D. 1845, June 3.—N° 10,698.

POOLE, MOSES.—(*A communication*).—“ Improvements in the construction of vessels to contain liquids and substances, and in the means of impregnating liquids with gases, and in drawing off such liquids from such vessels, and in closing such vessels.” The stopper fits into the neck of the bottle by means of three projections and as many recesses forming bayonet joints ; it is “ of a hollow cylindrical form, and may be made of tin or other suitable material.” Above the projections is a shoulder which rests on the upper part of the neck ; at the lower part is a metallic washer with an elastic packing, through which passes a rod made with a flange that presses against the packing. The hollow and the washer are tapped for the reception of a screwed piece which carries “ a small rod forming a handle.” By turning the handle the projections “ rise and press against the upper sides ” of the recesses, and “ a direct pressure ” is given “ upon the sides of the inner opening of the bottle, which opening is

" perfectly closed by means of the metallic shoulder" and the lateral compressure of the packing.

In "vessels of certain dimensions," and in vessels "to contain preserves," the upper part of the neck is cylindrical, the lower part conical; the inside is tapped for the reception of a similarly shaped screw stopper. The stopper is turned by a rod which passes through it carrying a washer and a shoulder. When the stopper is in position, the shoulder only "will be in contact with the liquid contained in the vessel."

In "ordinary glass bottles" "all the screw part is suppressed." The elastic part "is compressed between the shoulder of the rod and the washer which is slightly conical." The washer carries either two projections "which fit into notches made in the bottle," or "limbs projecting down under the rim."

"For drawing off gaseous liquids from bottles," the "metallic and elastic stopper, with the projections," &c. first described, "is combined with a moveable syphon," whose long arm "passes through the centre of the elastic washer," and "nearly to the bottom" of the bottle.

"The valvular arrangement in the inner opening of the syphon," the mode of drawing off the liquid (by pressing a button which depresses a spring and valve), a modification of the arrangement, and the process of manufacturing the bottles and stoppers are given in the specification.

[Printed, 1s. 2d. Drawings. See *Mechanics' Magazine*, vol. 47, p. 491.]

A.D. 1845, October 16.—N<sup>o</sup> 10,881.

WEST, BENJAMIN.—"Improvements in covering or stoppering the tops of bottles, jars, pots, and other similar vessels." The patentee applies "the electrotype process for the deposition of metals around, upon, and over the upper surface" of bottles, &c. and the corks, &c. used therewith.

He constructs "an electrotype apparatus circular in form," and "at or near the bottom of the vessel containing the sulphate of copper or other metal" he places "a ring of copper or other metal," which he connects with the acid by a wire. Upon the ring he puts "side by side, in an inverted position, the tops of the bottles," &c., and the tops "are covered or stoppered in a short space of time."

[Printed, 4d. No Drawings. See *London Journal (Newton's)*, vol. 28 (*continued series*), p. 269; *Patent Journal*, vol. 1, p. 20.]

A.D. 1845, October 17.—N° 10,888.

DESGRANGES, HIPPOLYTE PIERRE FRANÇOIS.—“Improvements in the mode of manufacturing corks.”

[No Specification enrolled.]

A.D. 1845, November 6.—N° 10,930.

COOPER, ROBERT BURTON.—“Improvements in taps or cocks, and in stopping bottles and other vessels.”

1. Taps:—The spout is connected to the body of the tap “by convex and concave ground surfaces,” in such manner that it can be made to revolve. The spout “is kept up to its position” in the following manner:—The cylindrical portion of the stem of the handle “descends into the cylindrical recess in the body” of the tap; the square end of the stem enters a square recess in the spout; a pin is fastened through the spout “and enters into a notch formed in the square end of the stem;” and a coiled spring “surrounds the stem of the handle,” pressing with a tendency “to force the handle away from its seat.” On the under surface of the handle there is a stop which enters a groove in the upper part of the body.

In another arrangement the body has inside it a sliding tube carrying at its inner end a valve, which is kept shut by the pressure of the fluid in the vessel.

An earthenware tap for an earthenware vessel:—The body is made “with an enlarged end which is ground into a recess formed in the vessel.” There are projections, “the inner surfaces of which are inclined,” on the vessel, and a ring, “taking under the inclined surfaces,” presses the concave and convex surfaces of the tap and the vessel together.

2. Stopping water-plates:—The opening is in “the under surface;” it is closed by a cover, “which is ground into its seat;” a metal plate with inclined surfaces is fastened to the cover by a metal plug; and these inclined surfaces are pressed against inclined surfaces “on the mouth of the opening.”

3. Stopping jars or such like vessels:—The mouth is made with inclined surfaces on the interior. On the cover is secured a plate by means of a metal plug, so that it can revolve without the cover. The plate is formed with inclined projections which come under those in the mouth.

4. Glass stoppers are secured in bottles, jars, &c. by making "a series of inclined surfaces" on the outside of the neck, and by fixing on the stopper metal hooks.

5. "Spherical stoppers" for decanters and the like are prevented from "falling over" by means of a "continuation" on them which enters the neck.

6. Stopping inkstands :—The cover and the top of the inkstand are "spherical and ground together;" the parts are united by a rod and screw nut, and a spring "tends at all times to keep the parts tight together." The cover is moved by a knob, and a stop controls "the extent of movement." There may be "a tube formed at the dipping place."

7. Mustard pots and chemical jars :—The cover, "with a spherical surface," is ground into its seat, and a ring "cemented or fixed therein" makes a close joint when the cover "comes down on to the spherical surface." In chemical jars there is a hole in the neck "for the passage back of any fluid which may cling to the outside and run down from the spout."

[Printed, 1s. 6d. Drawings.]

A.D. 1845, December 12.—N<sup>o</sup> 11,003.

POOLE, MOSES. — (*A communication.*) — "Improvements in filling bottles and other vessels, and also in covering, stopping, or securing liquids and other matters in bottles and other vessels." 1. "A bottling machine :"—A frame supports a trough of sufficient dimensions to contain a quantity of liquid to fill twenty-four or more bottles." Under the trough "a double beam" moves on an axle fixed in uprights. At each end of the beam is a dove-tailed piece, moving on a pin and constructed to slide freely in a groove (when the beam is in motion) formed in the under side of a platform. A rod fixed to the platform slides vertically in a bracket on the frame. The bottles stand in baskets on the platforms, and ascend and descend with the ends of the beam. Syphons are so arranged that one end of each is in the trough, and the other hanging directly over the neck of a bottle. The ends of the syphons in the trough are when required stopped by pieces of cork or other substance; these are secured to levers which move to and fro by aid of connecting rods, small cross beams, and loaded vertical rods that pass through the double beam. "The regulating supply cock" is composed of (\\) a

metal cylinder ; (2) a rod passing through the cylinder and carrying on the portion inside the cylinder a disc " of the exact diameter of the cylinder ;" (3) a forked lever with a ball or float to shut off the supply when the liquid has reached a certain height.

2. The cap employed for securing liquids is of metal, and so shaped that it ends in " six teeth ;" these are " bent to the neck " of the bottle " so as " to hold securely thereon."

[Printed, 1s. Drawings. See Patent Journal, vol. 1, p. 93.]

A.D. 1846, January 20.—N<sup>o</sup> 11,055.

BURKE, WILLIAM HENRY.—" Improvements in the manufacture of fabrics," which may if required be made air and water-proof, a part of the materials employed herein, when combined with other matters, being intended to produce coverings for " vessels of capacity." The patentee produces " a membranous material resembling thin metal " from " a thin quality of Clark's cloth " coated with a solution of caoutchouc or gutta percha, or from " cotton fleece " prepared with a like solution. The surface is washed over " with a solution of gutta percha or caoutchouc in spirits, containing fine powdered metal." Or the membranous material may be made " by rolling out between " heated rollers at a temperature of about 100° Fahr., " gutta percha or caoutchouc, or a combination thereof, constantly applying hot water during the rolling. The before-named solution is washed over the material, or powdered metal is mixed with it during the rolling.

The sheets of membrane are cut into sizes and formed into shapes on warmed metal models ; the models are afterwards plunged into cold water, thereby enabling the shapes to be removed from them. The shapes are readily passed over the necks of the vessels, and " by the application of heat before a fire, " or immersion in boiling water, the membrane is made to " shrink and instantly attach itself to the vessel."

[Printed, 8d. Drawing. See London Journal (*Newton's*), vol. 30 (*continued series*), p. 81.]

A.D. 1846, March 25.—N<sup>o</sup> 11,149.

SMITH, CHARLES.—" Improvements in cooking and culinary " utensils, and methods of heating and suspending or fastening



"articles of domestic use and similar purposes." In "Plan 2, Division 4," Figures 9 and 10, the patentee shows his method of covering inkstands so as to "prevent the intrusion of dust, and also to a considerable extent evaporation of the ink." The stand of the ink vessel has a groove formed round it, and a cover fits into the groove hermetically.

In Figure 11 he shows his method of "hermetically securing" a jar or canister:—The jar is enclosed in a casing made in two parts; the lower part is made with a groove which contains "hermetically securing powder or other suitable matters;" the upper part forms a removable cover which fits into the groove.

[Printed, 3s. 6d. Drawings. See London Journal (*Newton's*), vol. 29 (*continued series*), p. 356.]

A.D. 1846, May 26.—N<sup>o</sup> 11,223.

MAYO, WILLIAM.—"Improvements in the manufacture of aerated liquids, and in bottling aerated and other liquids."

[No Specification enrolled.]

A.D. 1846, May 28.—N<sup>o</sup> 11,226.

BOISSIMON, CHARLES HEARD.—(*A communication.*)—"Improvements in manufacturing corks and bungs." Two machines are employed; one cuts the cork "into the required cylindrical size," the other gives it "the requisite conical or tapered form."

The first machine:—The main shaft runs through the framing, the extent depending upon the number of cutters to be arranged on it. The shaft carries, in addition to two pulleys at one end, two bevelled wheels giving motion to a series of wheels, the last of which series carry hollow cutters. By this arrangement corks of different sizes may be prepared. A bar is placed across the machine; upon it are pieces of wood (kept in position by guides) and levers which keep the pieces of cork "in an upright position" on the pieces of wood. Rods are attached at their lower ends to pedals and at their upper ends to collars fixed on the cutters, and on each rod is a spiral ring "by which is regulated the requisite tension for the sliding of a sliding piece" and a "screw press." Pressure on the pedal brings down the cutters; after they have passed through the thickness of cork, the springs on the rods raise the cutters carrying with them the cut corks. When the cutters are filled, the corks "are emptied from the upper part" and received into tubes which convey them into cases.

The second machine :—The corks “are ranged in rows” and placed upon an endless chain which is “moved to and fro” by projecting pins “placed along the length of it.” When the corks are brought to the point where the chain “turns over” a roller,” one of them “is pushed by the projecting pins “between the cheeks” of a holder, “which at this time is brought “in front of the chain.” The cheeks close and carry the cork “between two running discs,” which close upon it, and when they have given it “a little more than one revolution,” a blade, capable of adjustment according to the size of the cork and the degree of tapering required, “is caused to pass and repass the “whole of its length and raises a shaving upon its circumference.” One of the discs is drawn back, and a piece, “suddenly allowed “to fall,” forces down the cork and makes room for the next.

“The mechanical movements by which these different operations “are performed” are explained in the specification.

[Printed, 1s. 2d. Drawings.]

A.D. 1846, May, 28.—N<sup>o</sup> 11,228.

STOCKER, ALEXANDER SOUTHWOOD.—“Improvements in the “manufacture of bottles and other similar vessels, also in stop-  
“ping or covering the same, and in the manufacture and applica-  
“tion of the whole or part of the articles to be used.” An annular recess is formed in the upper portion of the neck of the bottle. This portion of the neck is made thicker than usual, and it is preferred that such thickness should extend a little farther down than the recess. A groove is cut or formed on each side of the thick portion. A ring of cork or other elastic material (by preference gutta percha) is fitted into the recess.

The stopper is composed of a hard plug and a head which serves as a cover to the mouth of the bottle; the whole may be made of glass, earthenware, or other suitable material. A groove is formed “across and on each side” of the head for the reception of the wire or twine which secures the stopper in the bottle.

This “new compound stopple or stopper and cover” may be applied to ordinary bottles.

[Printed 6d. Drawing.] See London Journal (*Newton's*), vol. 41 (*continued series*), p. 230; *Mechanics' Magazine*, vol. 57, p. 217.]

A.D. 1846, May 28.—N<sup>o</sup> 11,229. (\* \*)

BLYTH, JOHN.—“An improved mode of closing the orifices of “bottles or other vessels, applicable to inkholders.” The mode

invented is "by the reaction of any kind of spring or counter-weight or floater" applied to "an internal flap, or valve, or door." In the upper part of the inkholder is an aperture, into which a ring is fitted either by packing or cement. A valve, larger in circumference than the ring, is "borne upwards" against it by "a slender helical spring" placed "beneath the lower end of a moveable vertical stem." The spring, made of metal wire "not liable to active corrosion by the ink," and the stem are in a tube, which either passes through the bottom of the inkholder or stands upright therein, "being formed in the solid therewith;" in the former case, the lower part of the inkholder "rises with a dome-shaped convexity," and the tube has a flange round its upper end and is fastened into its place by means of a nut screwed on to its outside, collets of leather, india-rubber, or other suitable packing being previously applied beneath the flange and above the nut. The stem is rounded at the top and acts in a corresponding cavity in the valve, and on its lower end is a "projecting head" which fits loosely into the tube above the spring. The valve may be attached to the ring by a hinge, and instead of the spring and stem may be used "a flat blade spring," with one end fastened to the ring, and the other turning up beneath the cavity of the valve. The requisite spring may be given by attaching to the valve, by means of a circular rim projecting downwards, a caoutchouc air bladder, or simply a piece of caoutchouc with an air hole in it. The stem must now be fixed motionless with its top pressing against a small shield cemented to the bottom of the bladder or caoutchouc. Or the stem may be fastened to the centre of "a floater" either floating on the surface of the liquid or submerged; if submerged, it may be made of one or more pieces "overlapping one another at the common centre," in either case it has "radial arms" by which it is fastened to the inkholder. By surmounting the aperture with "a sort of hollow turret" and applying the valve to one side thereof by a hinge, a vertical opening may be obtained, which can be kept closed by a spring, or by a counterweight, or by both.

[Printed, 8d. Drawing. See Repertory of Arts, vol. 10 (*enlarged series*), p. 90; London Journal (*Newton's*), vol. 29 (*conjoined series*), p. 405.]

A.D. 1846, June 29.—Nº 11,266. (\* \*)

MILL, WILLIAM.—"Improvements in instruments used for writing and marking, and in the construction of inkstands."

The inventions relate to ever-pointed pencils, penholders, and inkstands. The first described inkstand is composed of a stand and an inkholder, the latter resting in a tube in the former. The cover of the inkholder turns on axes carried in slots in two standards, and its end is connected by a rod to a "horse-shoe" beam moving on an axis in the tube. The parts are so arranged and adjusted that a pen, when placed in a receiver which is carried by the beam, will by its weight cause the cover to shut, and by its removal to open. The patentee does not confine himself to this particular arrangement of the pen.

Another invention is making a penholder serve as a stopper to a portable inkstand:—This is effected by screwing a penholder with a female screw at the upper end of its cap on to a case containing an ink vessel and having a male screw outside its neck or shoulder. A spring at the bottom of the case presses the ink vessel upwards against the cap.

[Printed, 1s. 2d. Drawings. See Repertory of Arts, vol. 17 (*enlarged series*), pp. 51, 103, and p. 58 for Disclaimer; Mechanics' Magazine, vol. 53, p. 433; Patent Journal, vol. 9, p. 147; vol. 10, pp. 63, 98; and vol. 11, p. 29; Beavan's Reports, vol. 14, p. 312; Jurist, vol. 15, p. 59; Common Bench Reports, vol. 10, p. 379; Lowndes, Maxwell, and Pollock's Reports, vol. 1, p. 695; Law Journal (Common Pleas), vol. 20 (*new series*), p. 16.]

A.D. 1846, August 31.—N<sup>o</sup> 11,362.

WEST, FREDERICK HENRY.—"Improvements in securing corks in bottles, jars, and other vessels to contain liquids and other matters, and also improvements in such bottles and other vessels." Various modes of securing corks are described.

1. A plate "furnished with two ridges or grooves" is placed on the cork and secured to the neck of the bottle by wire, which being twisted round the neck "is then brought over the plate" and fastened "by passing it over or round a loop or eye which must be left over the wire which surrounds the neck."

2. "A piece of metal having a tendency to become straight" is placed over the cork; the ends are turned under the rim of the neck which is "furnished on its outer sides" with loops. A forked piece has its ends passed through the loops.

3. The rim of the neck of the bottle is made with a "surrounding groove" and a "vertical groove, the sunken surface of which must be on the same plane" as the other, on each side. The cap made with "two inward projecting pieces" is slid down the vertical grooves and secured by giving it "half a turn." The top of the cork should be cut level with the neck.

4. The plate is made with straps which catch under the rim of the neck. The straps may be shaped so as to be secured round the neck with a string or wire.

5. The plate has fastened to it a cross bar whose ends pass through holes in side straps which are secured to a ring. "Ob-long rings" may be substituted for side straps.

6. The plate has two arms; to these are pivoted hooks whose lower ends catch the under side of the rim of the neck. The hooks are "kept pressing the neck" by two springs which are riveted to the plate.

7. A piece of metal or other material with suitably bent sides "is applied to the cork and bottle by sliding it on from either side."

8. A covering of wire gauze, formed in two parts and opening on a hinge, is passed over the cork and neck and secured by binding it round with string or wire.

9. A cross bar (or a cap and cross bar) is placed on the cork, and a ring with two eyes is "slipped on the end of the bottle;" a wire or string is passed over the bar and through the eye; there is a similar fastening on each side.

[Printed, 10d. Drawing. See Patent Journal, vol. 2, p. 667.]

A.D. 1846, September 24.—N° 11,379.

FONTAINEMOREAU, PIERRE ARMAND LE COMTE DE.—  
(*A communication.*)—"An improvement or improvements in the "manufacture of corks." Three machines are employed; the first for cutting pieces of cork into sheets; the second for punching the sheets into cylindrical corks; the third for making the cylinders "more or less conical, of any required thickness, and "perfectly smooth and true."

1. A revolving shaft carries at one end a circular cutter, and at the other a cog wheel which is geared to a handle. The cork is placed on the top of the table of the machine; it is kept steady by means of a stop, and "is pressed gently against the edge" of the cutter.

2. Conical steel punches of different dimensions are screwed into the lower ends of brass tubes, which are secured in a cross bar by screw nuts. The tubes are steadied in their "ascending and descending motion" by metal casings fixed in another cross bar. "Cast-iron pinions" are "fixed permanently on the "brass tubes;" they communicate rotary and also ascending and

descending motion to the tubes and cutters by means of chains "passing over" them and "catching" with them. Cat-gut strings and counterweights are connected to the ends of the chains; some of the strings are attached to double pulleys; and the machine is set in motion by treadles. The sheets of cork are placed in suitable recesses formed in another cross bar and in guides. The corks when punched out ascend the tubes, pass out, and are received in a box.

3. A table supports the machinery; it is "pierced in several parts to allow the passage of the knife and cat-gut strings," and it has also "a square hole near the round nuts or washers holding the cork," in order to permit each cork as it is finished "to escape through it." A vertical shaft is fixed on the table; at its upper end is a lever moving on a pin; at the inner end of the lever is fastened a string which descends round a pulley mounted on the table and thence ascends to one end of a handle working in a support fixed on the table. The other end of the lever carries a rod which is steadied by clamps projecting from the shaft, is pressed down by a coiled spring round its upper part, and carries at its lower end a toothed washer. Below the table is a revolving rod "of greater diameter" than the upper rod; it passes "through a metal casing fixed to the table" and carries at its upper end a toothed washer. The cork is held between the washers and is subjected to the action of a knife having an "ascending and descending motion." The knife is screwed to a holder which slides freely between supporters; it is kept "steadily pressing on the cork" by a "small elbowed shaft" provided with a small roller fixed to the shaft" which carries the supporters; it is kept sharpened by a grinding stone in each motion. The whole is worked by a treadle connected with pulleys and strings (the arrangement of which is fully explained) and by counterweights.

[Printed, 1s. 6d. Drawings.]

A.D. 1846, November 19.—N<sup>o</sup> 11,455. (\* \*)

BROCKEDON, WILLIAM, and HANCOCK, THOMAS.—"Improvements in the manufacture of articles where india-rubber or gutta percha is used." The improvements consist "of peculiar means of applying these substances to a variety of purposes to which they have not heretofore been so applied, by

" means of the processes described in the Specification of a Patent granted to Mr. Alexander Parkes, dated the 25th day of March 1846." The processes enumerated in this Patent " produce certain changes in the qualities of caoutchouc and gutta percha, some of them similar to those produced by sulphur and heat in the process now termed 'vulcanizing,' in others purifying and colouring those substances." The word "change" is used by the patentees to denote the same process or processes, and the word "immerse" to signify "the mode of producing the change by immersing the articles in solvents capable of producing such change." The preliminary manipulations and manufacture and the processes for coloring, embossing, printing, moulding, &c., have been described "in the Specifications of other Patents, amongst others in the Specifications of the Patents granted to the within-named Thomas Hancock, dated the 18th of April 1837, the 23rd day of January 1838, the 21st of November 1843, and the 18th of March 1846, as well as in the first-named Patent of Mr. Parkes." The substances or a compound thereof, "with or without gritty or coloring matters and fibrous substances," are formed into sheets of any required thickness by means "similar to those described in the patents of the said Thomas Hancock." From these sheets, "whether combined with fabrics and fibrous and other substances or not," are manufactured (amongst many articles enumerated) covering stoppers and bungs, covers of pickle jars, and capsules for bottles. The "change" is produced either when the substances are in sheets or made up into the article.

[Printed, 6d. No Drawings. See Repertory of Arts, vol. 10 (*enlarged series*), p. 108; *Mechanics' Magazine*, vol. 46, p. 504.]

A.D. 1846, December 1.—N<sup>o</sup> 11,471.

MAYO, WILLIAM. — "Improvements in the manufacture of aerated liquids, and in apparatus used for such manufacture, and when pumping other liquids, and also in bottling fluids." The novelty of this invention consists in "employing stoneware apparatus for generating the gas used" and for manufacturing aerated liquids. The pump barrels, cylinders, cylinder covers, pistons, &c., are all of stoneware.

"I would state" says the patentee, "that the bottling apparatus is not of itself new; I do not therefore claim the same, but its connection with stoneware apparatus is new."

In some of the drawings is shown a tube (by preference of stoneware) "suitably arranged for running the liquid into ordinary "bottles." "A suitable bottling apparatus" is connected to the tube, "such bottling apparatus having a conical opening for "receiving the cork, and a stand for the bottle capable of being "raised and lowered by a treadle."

[Printed, 2s. Drawings. See Patent Journal, vol. 3, p. 26.]

A.D. 1847, January 28.—N° 11,552.

RAMMELL, THOMAS WEBSTER.—"Improvements in the preparation and application of cork for linings and other useful purposes."

[No Specification enrolled.]

A.D. 1847, July 3.—N° 11,784.

CLAEYS, THEODORE, and STRAND, LOUIS FRANCOIS.—"Improvements in the manufacture of various articles from cork."

[No Specification enrolled.]

A.D. 1847, November 30.—N° 11,981.

BETTS, WILLIAM, and JACOB, GEORGE WILLIAM.—"Improvements in the manufacture of capsules, and in the application of designs to certain descriptions of surfaces." This invention, as regards capsules, consists in causing them "to be "printed, or embossed, or indented in colours, or ornamented "with a colored design."

A mixture is made of "a thick lithographers' varnish with boiled "linseed oil until it is about the consistence of treacle," as much ground dry colour "as will readily mix with this varnish," and a small quantity of "japanners' gold size." The mixture is applied with a printers' roller "to the die or engraved surface by which "the capsule is stamped." The capsule, all grease or dirt being carefully removed from its top, is placed upon the die or surface, and "by means of the pressure for stamping" becomes "embossed, "ornamented, or printed" in colour.

Another method:—The raised portions of the die are charged either "with the mixture or colour lastly above described or with "the varnish and japanners' gold size only." After the capsule has been embossed or printed, and before the colour or varnish is



set, gold or silver or Dutch metal leaf is applied to it, or bronze or other dry pigment or powder is dusted on it.

[Printed, *4d.* No Drawings. London Journal (*Newton's*), vol. 34 (*conjoined series*), p. 199; Patent Journal, vol. 5, p. 83.]

A.D. 1848, January 11.—No 12,019.

HELY, ALFRED AUGUSTUS DE REGINALD, and NORTON, JOSEPH EMMETT.—“Improvements in bottles or vessels for containing liquids, and in the mode of and machinery or apparatus for filling and stopping the same.” One part of this invention relates to making bottles in such manner that they can be “completely filled with any desired liquid.” A vent-hole is made “immediately under the bite or nip” of the neck “for the purpose of allowing any superfluous liquid to pass off whilst corking;” the cork “when driven home will prevent any liquid escaping by such vent-hole.” The hole may be made elsewhere but it must be provided “with a separate cork.”

Bottles for aerated liquids are made “with holes in the rim or ring and inclining upwards therefrom,” or with notches “extending from the outer orifice of the mouth to the rim.” The cork-driver is “of a somewhat smaller diameter than the mouth of the bottle or vessel, with a shoulder to prevent the end of such driver from entering into the bottle;” it has “four notches or grooves cut at right angles on the end thereof,” to admit of the wire and string “being passed through whilst the driver retains the cork in its position.”

Another part relates to filling bottles:—The tap of the cask passes into “a cylindrical receiver,” which is provided with several taps and a gauge float. The bottles are placed under the taps in a trough in an inclined position.

Another part describes a mode of preparing corks, and a mode of corking bottles which contain aerated liquids:—A hole is made down the middle of the cork to admit a threaded tube. The cork is driven into the bottle (before filling) by a driver similar to the one before described “but having a hollow centre to admit that part of the tube which projects beyond the cork.” The wire is then put on, and the bottle is filled through the tube. When the bottle is sufficiently full the tube is seized with “a pair of powerful square nosed pliers,” and is pinched flat close to the cork; the bottle is removed and the tube is turned over and again pinched.

Another part describes an apparatus (and its action) for corking bottles made with or without vent-holes :—It is composed of (1) framework ; (2) a cross slide having a smaller cross slide “ depending therefrom,” and “ working against V-shaped guides ;” (3) a driver “ terminating in a cylindrical end” and fixed to the smaller cross slide ; (4) a socket, cylindrical at the lower part and conical at the upper part “ for compressing and guiding the “ cork ;” the driver and socket are removable ; (5) a moveable table “ working against V slides and supporting a boot which “ holds the bottle ;” (6) a spindle, connected at the upper end to the table and at the lower end to wheel gearing whereby the table is raised or lowered ; (7) rods connected at their upper ends to the upper cross slide and at their lower ends to levers which are fixed to a horizontal spindle ; (8) a lever handle (connected to the horizontal spindle) whereby the whole is set in motion ; (9) a rest for the left hand ; (10) a can for catching the liquid discharged through the vent-hole ; (11) a lock spring for the lever handle “ when the machinery is not in action, thereby “ keeping the driver out of the socket.”

[Printed, 1s. Drawing. See Artizan, vol. 6, pp. 200 and 248 ; Patent Journal, vol. 5, p. 199.]

A.D. 1848, August 21.—N<sup>o</sup> 12,247.

YOUNG, WILLIAM. — “ Improvements in closing spirit and “ other cans or vessels.” First method :—On the upper part of the neck “ is formed an enlargement,” which serves as a shoulder inside ; it is cut with a screw on the outside. A cap with a screw on the inside and a hole on the top screws on to the enlargement. The cork “ will be compressed between the top of the cap and “ the shoulder.”

Another method :—A disc of sheet metal is “ raised into a “ conical form.” The cork enters the neck and rests on shoulders therein ; it is “ retained and pressed securely by means of the “ disc, which is introduced in the conical form, that then is to be “ caused to spread out and become flat by pressure, so that the “ edges will enter the groove around the neck.”

“ Closing cases or vessels in which cans or other articles are “ enclosed :”—A bracket having a male screw formed on it is fixed to the front of the case. A screw nut is attached to the cover “ in such manner that it can revolve ” but “ not be “ separated ” from the cover. The cover will be fastened securely

by turning the nut by aid of a key, and "by running wax into the recess" a seal impression may be added.

A bung or such like stopper is made by cementing an interior of wood to an exterior of cork with waterproof cement.

An improved cover for bottles consists of "a cover of metal lined on the inside with a ring of cork."

Sometimes bottles are made "with an opening through the neck laterally, as well as in the ordinary direction." In such case, the cork enters through the side and closes both openings at once. The patentee recommends this construction for bottles to contain aerated liquids.

[Printed, 1s. 10d. Drawings. See *Mechanics' Magazine*, vol. 30, p. 188; *Artizan*, vol. 7, p. 183; *Patent Journal*, vol. 6, p. 208.]

A.D. 1848, November 2.—N° 12,305. (\* \*)

BRIGHT, RICHARD.—"Improvements in lamps, wicks, and covers for vessels for holding oil and other fluids."

The eighth part of this invention relates to vessels "for containing oil and such other fluids as are liable to suffer in quality from exposure to the atmosphere."—A diagram or float is placed inside the vessel; it is "as nearly as may be of the size of the interior" of the vessel; it may be of wood or of metal, but it is preferred to make it "of thin plates, and of about one inch and half in depth." "For the rigid metallic float" an air bag of any elastic substance, or two plates joined at the edges by an elastic band, may be substituted.

[Printed, 1s. Drawings. See *Mechanics' Journal*, vol. 50, pp. 429 and 464; *Patent Journal*, vol. 7, p. 116.]

A.D. 1848, November 18.—N° 12,330.

MASTERS, THOMAS.—"Improvements in apparatus for making aerated waters, and in apparatus for charging bottles and other vessels with gaseous fluid; also improvements in bottles and other vessels, and in apparatus for drawing off liquids, and in securing corks or stoppers in bottles or other vessels, and in taps and vent pegs." The lower part of the apparatus for making aerated waters is called by the patentee "the permanent vessel;" in charging bottles, this vessel is removed, and the bottles are put into its place.

Apparatus for drawing off wines and such like liquids from casks:—"A syphon tap" is employed; a cylinder, piston, and

valve at the bottom of the cylinder, form "an air pump or "forcer." The cylinder terminates in a long stem with an air-hole in its side, and the piston is kept up by a spiral spring. There is a tap at the top of the stem.

If the liquids are in bottles "under a pressure," the stem of the syphon tap is perforated near the bottom and ends in a screw "for facilitating its passage" through the bottle cork. The valve seat has its face downwards, and the valve with its stem is pressed upwards by a spring and by the pressure of the liquid. The spring presses down a packing of leather or gutta percha, which prevents "any escape of the liquid through the cover." The packing "may be further screwed down by the cover pressing "on it." On pressing down the button of the valve stem the liquid rises and issues forth through a spout situate in the cylinder above the valve. This arrangement admits of several modifications which are described.

"Taps, cocks, or valves :"—"The general principle" upon which these are constructed "is the employment of leather, "gutta percha, or other flexible material for the purpose of forming them fluid-tight;" these substances are arranged and modified in various ways. In the arrangements described, the substances are applied sometimes "to the moveable parts, and at "other times to the stationary parts."

Self-acting vent pegs :—A valve "composed of light materials" is kept up to its seat by a spiral spring. The action of the spring "is so sensitive" that when the tap is opened, "the rarefaction "of the air within the cask" causes the external air "to pass "upon the valve" and "thus open it."

Stoppers are made of leather, india-rubber, gutta percha, or cork, "built on a core of metal" having a stem which passes through a screwed pin. Turning the pin by its milled head in one direction forces the stopper into the neck, and "reversing "the direction of motion" withdraws it. These stoppers are secured in bottles by recesses in caps taking into projections on the bottle neck.

Corks are secured by hoops or claws connected to eyes on a metal ring which is fastened round the neck.

The patentee details modifications of his stoppers and corks and of the methods employed for securing them.

[Printed, 2s. 6d. Drawings. See *Mechanics' Magazine*, vol. 50, p. 497 ; *Patent Journal*, vol. 7, p. 139.]

A.D. 1849, January 13.—N° 12,415.

BETTS, WILLIAM.—“A new manufacture of capsules, and of “a material to be employed therein, and for other purposes.” The new material is a combination of lead with tin. These metals are cast separately into ingots and afterwards reduced by rolling and rerolling to the required thinness; the tin is to be reduced to “about one-twentieth part” of the thickness of the “lead,” whatever “that thickness may be.” The metals are then rolled together; there may be either a sheet of tin and one of lead, or a sheet of tin may be folded back over a shorter sheet of lead, so as to present a surface of tin on each side. The patentee describes at great length the processes of rolling and rerolling. The rolled material is cut into discs and manufactured into capsules by the method described in former letters patent granted to Mr. B., “which process is now well understood.” The discs or the capsules may be embossed, varnished, coloured, &c., &c.

[Printed 4d. No Drawings. See Repertory of Arts, vol. 15 (*enlarged series*), p. 101; London Journal (*Newton's*), vol. 35 (*conjoined series*), p. 40; Mechanics' Magazine, vol. 51, p. 66; vol. 66, p. 606; vol. 1 (*new series*), pp. 271, 368, 399; Patent Journal, vol. 7, p. 181; Law Journal (*Queen's Bench*), vol. 27 (*new series*), p. 154; vol. 28 (*new series*), p. 361; Jurist, vol. 3 (*new series*), p. 357; vol. 4 (*new series*), p. 477; vol. 5 (*new series*), p. 1164; Law Times, vol. 34, p. 237; Law Times Reports, vol. 3 (*new series*), p. 237.]

A.D. 1849, June 20.—N° 12,665.

BROOMAN, RICHARD ARCHIBALD. — (*A communication.*) — “Improvements in apparatus for transferring liquids from one vessel to another, and for filling bottles and other vessels with “liquids.” The inventor employs a funnel with mechanism inside, “whereby the flow of the liquid from one vessel is stopped “as soon as that in the receiving vessel reaches to any given “height, without there being any loss of liquid attending the “operation.”

In the funnel pipe are openings “to facilitate the flow of the “liquid through the funnel.” In the inside of the pipe is fixed a cone with a hole in its apex for the free passage of a float spindle. In the conical portion of the funnel is a cross plate, open in the middle and carrying a support for two levers; the upper one is called “a float lever,” the lower one a “wing lever;” the latter has “cross pieces” at one end and “is weighted” at the other. A tube moves up and down between the cross pieces,

it has near its upper end "stop pieces," to which "wings" are hinged, and to its outside is attached a valve which fits into a seating fixed in the lower part of the conical portion of the funnel. Below the cone is a float; the float rod passes up through the tube and the float lever, and its length is regulated by screw nuts. The levers are connected by links; the float lever is hung in the support "at about one-fourth of its length from the link "end," the wing lever "midway in the support." The tube is lifted when required by a wire handle. The action of the funnel is described; also a modification of some parts when the funnel is used "for filling large vessels, such as barrels, &c."

[Printed, 10d. Drawing. See *Mechanics' Magazine*, vol. 51, p. 617; and vol. 52, p. 16; *Patent Journal*, vol. 8, p. 153.]

A.D. 1850, May 8.—N<sup>o</sup> 13,074.

YOUIL, JOHN.—"Improvements in machinery or apparatus for "washing, cleaning, filling, and corking bottles and other "vessels." The second part of this invention relates to an apparatus for supplying "simultaneously a certain given amount "of liquid" to a number of bottles, "the number shewn in the "drawing being twelve." A framing supports a trough divided into equal partitions. At the back of the partitions is "an "elongated trunk," communicating with "each separately by "means of a slit" and supplied with liquid through a piston valve and pipe. Three sides of each partition are equal in height; the front side is "considerably lower." Covering the front sides is a slide capable of being raised or lowered by turning a shaft. The slide, "when brought to its required position," is tightened against the front of the partitions by set screws, thereby preventing leakage; it has also on its front side "a runner" having a pipe at the middle of its length, "so that any liquid "in excess of the determined measure which may be supplied" will run over the top of the slide, enter the runner, and discharge itself by the pipe. Directly under the pipe is a cup "loosely "inserted in a hoop" at the end of a bar, "which constitutes a "lever." The other end of this lever is connected by a rod to the rod of the piston valve; the whole is so adjusted that when the cup is empty, "the piston falls by excess of weight." Sometimes springs are used "to assist the downward motion of the "piston." Within each partition "and close to that side of it "nearest to the trunk" is "a thin division plate" which

prevents the liquid entering "from frothing violently up." At the bottom of each partition is a valve which when raised allows the liquid to descend through a pipe into a bottle. The valves are raised by having their rods connected with levers keyed on a shaft which is actuated by a handle. The bottles stand on a rail adjustable as to height. The action of the apparatus is explained.

The third and last part consists of a machine for corking bottles :—A stand is adjustable to any convenient height in a framing by means of a wheel and screw ; on the top is a circular recess in which are a washer of india rubber and a disc cupped to suit the bottom of a bottle. Above the stand is a small funnel " having its top opening of a narrow oval shape, but terminating " at its bottom in a round hole," into which is screwed a mouth-piece suited to the size and shape of the top of the bottle and to the size of the cork ; it can move up and down "to a small " extent" by aid of guide rods. Above the funnel is a ram working in guides and set in motion by rods connected to a crank. " Directly above the front of the opening of the funnel " is a vertical tube " of such diameter as to admit of a cork standing on end, and of such a length as to contain a number " standing one upon another." On the top of this tube " and " capable of sliding up and down to a limited extent " is a larger funnel containing a number of corks and receiving "a jerking " motion" from connecting rods and levers by means of a cam. A "mechanical contrivance," whereby only one cork can be dropped at a time from the tube, consists of a spindle carrying a lever with two arms, one of which is caused by a spring to cover the bottom of the cork until the proper point of time for releasing it. On the spindle is fixed another lever or arm "with " a serrated extremity," which passing through a slot in the tube "bites against the side" of the cork next above "and " thereby detains it until the arms are brought back to their " original position." The mechanism for setting the foregoing in operation and the mode of working the machine are detailed in the specification.

[Printed, 1s. 2d. Drawings. See *Mechanics' Magazine*, vol. 53, p. 398 ; *Patent Journal*, vol. 10, p. 80.]

A.D. 1850, June 8.—N° 13,109.

NEWTON, WILLIAM.—(*A communication.*)—"Improvements in " the manufacture of cords, ropes, bands, strong cloths, quiltings,

" sack, and cushions, in which manufacture caoutchouc forms an essential ingredient, and in the application of parts of these improvements to the manufacture of pads, stoppers, tubes, boxes, baskets, coverings, wrappers, and other like articles of utility." Among the articles mentioned are stoppers and "covers for the protection of glass and other bottles," but no special method of manufacture is given.

The articles are made of "cords of metallic india-rubber by winding or laying such cords into the form required whilst the rubber is in a green or uncured state" and then thoroughly uniting them "by subjecting the whole to the curing process."

To make the cords, roll a sheet of prepared india-rubber, "before it has been cured by heat," on to a beam with a sheet of cotton or other cloth interposed to prevent the surfaces from adhering, and place the beam "on appropriate bearings near the usual callendering rollers." Roll up a thin fleece of cotton or other fibrous substance on a beam and mount it also near the rollers. Put one end of the sheet (without the cloth) and one end of the fleece together in the bite of the rollers, and pass them through one on the other; the fibres of the fleece, or "so much of them as the india-rubber will receive," will be forced into the sheet.

The sheet is (by preference) cut into strips; the strips are rolled up, "worked either in or over a mould or pattern," and the article is then put into an oven and "heated to the required temperature to cure the india-rubber."

[Printed, 4d. No Drawings. See Repertory of Arts, vol. 20 (*enlarged series*), p. 187, and p. 194 for disclaimer; London Journal (*Newton's*), vol. 41 (*conjoined series*), p. 33; Mechanics' Magazine, [vol. 33, p. 476; Patent Journal, vol. 11, p. 2.]

A.D. 1850, June 24.—No 13,151.

MITCHELL, EDWARD.—"Improvements in fastenings for articles used for writing and drawing and other purposes, and improvements in articles to be used for writing and drawing." Among the improvements described in the specification is "a means of applying a spring and lever fastening to the cover of an inkstand and other vessels having like covers."

The cover moves on an axle pin, and below the part which moves on it is a tube containing a spiral spring and a sliding piece. The spring presses the sliding piece upwards, "and thus



“ keeps the cover close, shut, or open according as the under side  
 “ of the tail [of the cover] or the end surface thereof is resting  
 “ on” the sliding piece.

[Printed, 1s. 2d. Drawings. See *Mechanics' Magazine*, vol. 53, p. 518;  
*Patent Journal*, vol. 10, p. 166.]

A.D. 1851, January 16.—N° 13,455.

COWPER, CHARLES.—(*A communication*).—“Improvements in  
 “ the construction of apparatus for manufacturing, and apparatus  
 “ for retaining and drawing off soda water and other aerated  
 “ liquors.” The patentee describes—

1. An apparatus for manufacturing.

2. An apparatus for bottling “into ordinary bottles:”—A nozzle  
 at the end of the charging pipe terminates with an elastic washer  
 against which the mouth of the bottle is pressed up by a treadle.  
 The upper part of the nozzle is conical and contains a cock and  
 a plunger for pressing down the cork. An air-valve, terminated  
 at one end by a button, at the other by a cap containing a disc  
 of vulcanized caoutchouc and kept closed by a coiled spring, is  
 opened when required “to allow of the escape of air” by pressing  
 the button inwards. The bottle is surrounded by a shield to  
 prevent accidents.

3. “Valvular stoppers” for bottles:—The stopper is made of  
 “metal not acted upon by the liquor contained in the bottle;” it  
 is “formed with a spout for the ingress and egress of the liquor,”  
 and is furnished with a valve fixed on the lower end of a stem  
 which passes in a slanting direction through the stopper. The  
 stem has a button on its upper end; it is surrounded by a coiled  
 spring “which presses at its upper end against the button and at  
 “its lower end upon one or more discs” of soft material which  
 “serve as a stuffing box to prevent the escape of the liquor  
 “round the stem.” The lower opening of the stopper “is formed  
 “with a round edge;” the valve consists of a metal cap contain-  
 ing a disc of vulcanized caoutchouc. The stopper is attached to  
 the bottle by a collar of vulcanized caoutchouc which fills the  
 space between the stopper and the neck, and by a metallic capsule  
 which is “slipped over the stopper and the neck” and compressed  
 round the narrow part of the neck. Several modifications of this  
 stopper are described.

In filling these bottles the mouth is pressed up against the  
 nozzle (which is “a single nozzle, with a small conical jet sur-  
 m

“ rounded by a collar of leather or caoutchouc ”), and the valve is opened by the button “ coming in contact with a part of the “ nozzle.”

To draw off the liquor the bottle is inverted, and the button is pressed by the finger.

4. Apparatus for compressing the capsule round the neck :—“ A “ fine-threaded screw ” descends through a bracket ; on the screw works a nut having two arms ; a cord is fixed to one arm and attached to a roller and ratchet wheel on the other arm ; a treadle presses the capsule placed over the neck against the screw. The cord being passed once round the capsule and stretched by turning the wheel, the nut is turned, and as it descends, the cord “ compresses and burnishes the capsule.” This arrangement admits of modifications which are explained.

[Printed, 1s. Drawings. See *Mechanics' Magazine*, vol. 55, p. 76 ; *Patent Journal*, vol. 11, p. 219.]

A.D. 1851, February 24.—N° 13,525.

FÈVRE, GABRIEL DIDIER.—“ Improvements in apparatus for “ manufacturing and containing soda water and other gaseous “ liquids, and also in preserving other substances from evapo- “ ration.” The bottle is “ stopped with a cork kept fast by a “ tightening stopper.” This tightening stopper is composed of a collar passed round the neck of the bottle and tightened by a screw, a hook and a chain on opposite sides of the collar, and a cork of hard wood, “ of which the head is square and solid, the “ lower part round and hollow and of slight thickness.” The interior of the bottle neck is to be roughened “ and the cork “ steeped in stearic acid or in a similar liquid.”

Or the bottle may be closed “ by a stopper of natural or arti- “ ficial india-rubber secured to a screw and provided with a cock.” The wooden stopper “ may also bear a cock ” or a “ head piece ” shown in the sheet of drawings.

[Printed, 10d. Drawing. See *Mechanics' Magazine*, vol. 55, p. 196 ; *Patent Journal*, vol. 12, p. 27.]

A.D. 1851, November 3.—N° 13,796.

LANOA, FRANÇOIS MARIE.—“ Improvements in apparatus for “ holding and drawing off aerated liquors, and in machinery for “ filling vessels with aerated liquors.” The specification contains

a description of (1) a "syphon, cock, or apparatus" for filling and emptying, and an "apparatus for allowing an escape to the air" in the vessel while filling; (2) "an apparatus to be applied to the said or other vessel" for filling "otherwise than by the spout of the cock or syphon apparatus by which the liquor is drawn off."

1. The apparatus is described as "fitted to a common glass bottle." A cover "screws freely over the top" of a middle part, its lower edge being "maintained by a circular collar placed for that purpose" on the middle part. The middle part carries a spout and holds inside a valvular apparatus; it is screwed tight into a bottom part which is fastened to the bottle. A valve, "that allows the liquid, when pressed down, to enter," is made with a "cylindrical stem, the lower end of which has a curved conic-shape valve." The stem passes through "an air-tight ring" placed "just above the opening of the spout" inside; above the ring it is surrounded by a coiled spring, one end of which is fastened to the upper end of the stem. A ring (made by preference of a mixture of caoutchouc and gutta percha) faces "the conic part of the valve," and pressure of the valve thereon hermetically closes the bottle. A "plunging tube," through which the liquid is forced when the valve is opened, is screwed inside the lower end of the middle part.

The air escape is inside the bottom part; it consists of a valve pressed by a coiled spring against a ring which closes an opening made through the bottom part. There is another opening inside above the escape "behind the pressure ring" in the distance left between the bottom part and the lower part of the upper end of the plunging tube. When the escape is required to act, a stem is introduced which presses against the valve.

The working of the whole apparatus is described; and the plunging tube with its upper end or head piece "may be considerably changed."

2. This apparatus (which is placed "in the bottom" of the vessel) is composed of (1) a pipe with a mouthpiece at one end; (2) a stopper into which the pipe is fastened; (3) an outer pipe which holds the inner pipe "air-tight near the mouthpiece;" (4) a ring "placed over the surface of the stopper;" (5) a coiled spring between the two pipes for forcing the outer pipe against the stopper; (6) a piece fastened to the vessel and carrying all the parts screwed into it. The air escape is not required, as the air

" is allowed to escape through the coil, which is kept open as much as is necessary for that purpose."

[Printed, 8d. Drawing. See Repertory of Arts, vol. 19 (*enlarged series*), p. 363; *Mechanics' Magazine*, vol. 56, p. 378.]

A.D. 1851, November 25.—N<sup>o</sup> 13,832.

STOCKER, ALEXANDER SOUTHWOOD.—"Improvements in the stoppering or stopping of bottles, jars, pots, or such like receptacles." This invention relates, first, to lining metal or other capsules with gutta percha "which is interposed between the cork and the capsule." The gutta percha lining "will be found particularly beneficial when the cover is applied to vessels containing acids or corrosive liquids." If the form of the capsule is such "that it will not readily receive the lining," a tube to receive the lining is soldered or fixed in it.

Secondly, to making stoppers by fixing the upper ends of plugs of cork or other material into capsules of metal, glass, &c., "in such manner that the said plugs may fit closely against the interior of the rims" of the capsules.

Thirdly and fourthly, to closing "the opening or crevice around a bottle or other vessel, and between it and its stopper."—A washer of india-rubber is applied to the neck; "it may or may not be cemented to the shoulder on the neck." Or an ordinary elastic ring may be applied after the plug of the stopper is fitted in "by stretching it so as to pass it over the cover and then suffering it to collapse."

Fifthly, to securing covers to bottles:—A wire is hinged to each side of the cover; one is twisted to form a loop (which fits into a groove round the neck of the bottle) and also a projection or staple; the other serves as a catch or hasp to pass over the projection.

[Printed, 8d. Drawing. See *Mechanics' Magazine*, vol. 56, p. 458.]

A.D. 1851, December 11.—N<sup>o</sup> 13,857.

MASTERS, THOMAS.—"Improvements in retaining and drawing off aerated and other liquids, and in charging vessels with gaseous fluids, applicable to vessels for holding solid matters, and also as a fastening for utensils and apparatus, and in holders for cigars." The patentee describes *inter alia*,

A stopper for bottles and jars:—A stem, formed with a shoulder at bottom and a screw at top, carries a thick ring of india-

rubber and a loose collar above the ring. A nut working on the screw "by drawing up the stem compresses the india-rubber" and causes it "to expand in a lateral direction." The neck of the bottle or jar is made with a recess which is filled up with the expanded part.

Similar stoppers fitted with a contrivance for drawing off liquids from bottles:—A tube passes through the stopper; it has a bulb at the lower end, and a casing of india-rubber, drawn over the bulb, "serves to draw up the tube and bulb." The casing is "secured at the top by a capping." Holes in the casing and the tube allow of the escape of the liquid when the tube is pushed downwards. Sometimes "the india-rubber tubing terminates at its point of attachment" to the tube.

Spring nozzles:—These are adapted to bottles "without the expanding fixture;" they are secured by wires and "a thickness of india-rubber within the neck of the bottle."

Another mode of stoppering bottles:—This "consists simply in the application of a coating of thickness of mineralized india-rubber to corks or plugs and bungs."

A method of closing ice moulds, jelly moulds, &c. "to make an air and water-tight joint:"—A band of india-rubber is applied "round the joint or external part of union of the cover with the body of the mould."

[Printed 1s. 4d. Drawings. See *Mechanics' Magazine*, vol. 56, p. 509.]

A.D. 1852, March 24.—N<sup>o</sup> 14,038.

PARRIS, RICHARD.—"Improvements in machinery or apparatus for cutting and shaping cork." The patentee claims "a new combination" of mechanical parts and "a new description of cork cutters." The cutter is made toothed or saw-edged, and when used in his "improved machine" is circular, and usually fixed horizontally "at right angles upon the main driving shaft." On the shaft is a rigger having another rigger connected to it by a band; on the spindle of the latter is an endless screw putting in motion a spur wheel on whose spindle are two bevel wheels. One of these communicates its motion (through other wheels) "to a series of bevel gearing revolving around each side of the machine, which by its rotation imparts motion to a series of bevel wheels" fixed upon short spindles. One end of each of these spindles carries a joint "technically termed a

"Hook's joint," and thus motion is imparted to other bevel wheels, "causing the pieces of cork (when the apparatus is fed therewith) to rotate in a circular or other required manner according to the description of bevel wheels used." The other gives motion to another bevel wheel, upon whose spindle is a cam causing a series of levers to move up and down. To the other ends of the levers are attached vertical rods which connect them to the holders by joints. The holders (each of which has its hopper) are moved forward to bring the corks to be operated on, and backward "to release the finished cork and receive another piece" from the hopper. "The operation of receiving or picking up the pieces of cork, and releasing them after they are cut into the desired shape," is fully explained in the specification.

By taking out the "holders and their appurtenances," and substituting "a flat plate," the machine may be used for cutting sheets of cork into "oblong or other shaped pieces." One drawing shows "an arrangement of parts" in which the cutter is placed in a vertical position, and the specification contains a short description of the necessary alterations.

[Printed, 10d. Drawing. See *Mechanics' Magazine*, vol. 57, p. 299.]

A.D. 1852, April 15.—N<sup>o</sup> 14,059.

**BELTZUNG, FRANÇOIS JOSEPH.** — "Improvements in the manufacture of bottles and jars of glass, clay, gutta percha, or other plastic material, and caps and stoppers for the same, and in machinery for pressing and moulding the said materials."

1. "A valvular stopper" for bottles containing aerated liquids: —An ordinary screw cap is formed with a short tube in the middle. The lower end of the tube "is contracted so as to form a shoulder." A pipe, of some substance "not prejudicially acted upon by the liquid in the bottle," is inserted into the tube. The lower end of the pipe is closed, but lateral openings are made in it near the bottom, whereto is attached a piece of vulcanized caoutchouc. The edges of the caoutchouc close the opening between the tube and the pipe and serve as a valve. A tube of vulcanized caoutchouc is slipped over the pipe before it is put into the tube; this tube "serves as a spring to support" the pipe "and keep the valve in contact with the end of the tube," as well as for a packing to prevent the escape of the liquid between the pipe and the tube. The cap is screwed on the neck of the

bottle; and on depression of the pipe (the bottle being inverted) the liquid issues through the pipe, its upper end serving as a spout. The upper part of the pipe has a screw thread cut on it, carrying a nut, which, "when it is desired to prevent the action" of the stopper, "is screwed down upon the top of the cap."

2. A machine for making gutta percha caps:—A pedal is connected by a rod to one end of a beam, whose other end is connected by a rod to a block sliding in a dovetailed guide and carrying a punch. The punch has a screw thread cut on its exterior, and a hole bored up its middle. Under the punch is a pin fixed in the table of the machine; it has a shoulder, is smallest at the top, and fits into the hole in the punch, a small space being left in the punch "all round the thicker part of the pin" and its shoulder. Two dies are hinged together on the pin; they have handles which pass under adjustable stops. A piece of heated gutta percha is put into the closed dies, and the pedal is depressed; the dies are separated, and the punch carries up with it the cap, which is then unscrewed from it. The machine may be arranged as a fly press for producing several caps at once.

3. A machine for making metal caps is described, in which a disc of metal is placed in a recess at the top of the die; "a "presser die" forces the disc into the recess in the die. The punch is brought down, the disc is carried through the die," and formed at once into a cap.

Caps, when not made of gutta percha, have a lining of cork or other elastic substance.

[Printed, 1s. 6d. Drawings. See *Mechanics' Magazine*, vol. 57, p. 334; *Practical Mechanics' Journal*, vol. 5, pp. 207, 232.]

A.D. 1852, June 1.—N<sup>o</sup> 14,149.

GILBEE, WILLIAM ARMAND.—(*A communication.*)—"Improvements in machinery for cutting corks." The machinery "is composed principally of a knife moving horizontally and of two discs, either of the same or a different diameter." If the cork is to be of a conical shape, "the diameter of the disc of the claws must then vary and gradually decrease from the large end to the small one." The piece of cork is put into a holder by hand; it is then taken hold of by the claws, and is cut by the knife "which moves in a horizontal direction and alternately." After the operation a spring "strikes the cork and forces it off the claws."

"Two horizontal cylinders" are screwed on to the top of a cast iron frame. A cog wheel moved by a winch is connected to a fly wheel, which carries an eccentric giving motion to a cross piece. A connecting rod is jointed to the fly wheel and to a plate on which the plate of the knife is placed. The knife is set horizontally by means of cross pieces and screws. On the frame is fixed "a cast-iron chamber or recess;" it supports a plate whereon is set a moveable plate, "which ascends, descends, or bends, according to the size and form of the cork to be cut," and has movement given to it by a rack. The moveable plate carries two axles and two racks; the former are provided with cogs "and carry at one of their extremities the disc of the claws." A piece jointed to a lever "is provided at one of its extremities" with a weight "and gives a to-and-fro motion" to one of the axles "at certain determined intervals." A wedge fixed into a groove in the cross piece forces the racks to ascend; "they catch the cogs," and give the axles a rotary motion; and when the wedge "has arrived at the end of its range," weights force the racks to descend, whilst the wedge returns by means of a rod arranged for the purpose. The holder, set on a spring rod, passes through the moveable plate; it has "an alternate ascending and descending motion." The knife is sharpened by a small rotating grinding stone, and is lubricated by means of a piece "holding within its arms a sponge constantly full of oil."

The specification contains a full account of the whole of the machinery and of its working.

[Printed, 10d. Drawing. See *Mechanics' Magazine*, vol. 57, p. 477.]

A.D. 1852, September 23.—N° 14,300.

MATHIEU, FRANÇOIS.—(*Partly a communication.*)—"Improvements in apparatus for containing, aerating, refrigerating, filtering, and drawing off liquids, and in ornamenting such apparatus." In the description of the apparatus mention is made of a tube which enters the lower chamber ("where it effects the dissolving of the powders") and the upper chamber "which contains the aerated water," and of a stopper "so arranged as to allow the water to pass through the tube into the lower vessel or vase, or to stop its flow with facility without any external mechanism." This stopper is composed of two tubes, *cross pieces*, and buttons or valves. The upper tube has at its



lower portion a neck for holding elastic packing "for forming a junction with the apparatus;" the lower tube is attached to the upper one. The cross pieces inside the tubes serve as "guides and stops to the two valve spindles." The valves "work independently of each other."

One portion of the invention "consists of a new arrangement of stop-cock for discharging fluids, whereby the cock may be opened and the liquid discharged by the simple contact of the glass or vessel to be filled." Levers and rods are connected with the plug of the stop-cock by a projecting piece. One rod extends down part of one side of the vessel, and has at its lower end "a receiver for supporting the glass." The weight of the glass causes the cock to open. This arrangement, or a suitable modification thereof, is described for "a syphon vase," "an ordinary syphon bottle," "a bottle without a syphon," a fountain, and a barrel.

[Printed, 1s. 8d. Drawings.]

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## PATENT LAW AMENDMENT ACT, 1852.

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A.D. 1852, October 1.—N<sup>o</sup> 47. (\* \*)

PERRY, STEPHEN. — "Improvements in inkstands or ink-holders." The patentee claims the invention, first, of "combining a flexible or partly flexible ink vessel with a dipping cup and tube passing from above towards the bottom;" secondly, of "the combining of pumping apparatus with a stopper of ink vessels." The pumping apparatus, consisting of a disc of vulcanized india-rubber, "fixed at its edges," and "deflected by a screw or otherwise," is placed in the upper part of the stopper, "which is to fit air-tight." The vessel is "an ordinary ink

"vessel," and the dipping cup with its tube passes through the top by the side of the stopper.

[Printed, 6d. Drawing.]

A.D. 1852, October 2.—N° 178.

NEWTON, WILLIAM EDWARD.—(*A communication.*)—"Improvements in stoppers for bottles and other similar vessels." A metallic or other capsule is secured in any convenient manner on to the neck of the bottle. The portion which rises above the neck is screwed internally to receive the male screw of a plug, which in order to make an air-tight joint is provided at its shoulder with a washer of leather, gutta percha, or other suitable substance. The inside of the plug is hollow for the reception of a cork "which by entering the neck of the bottle will prevent the liquid contained therein from coming in contact with the metal."

The screws may be formed, the male on the capsule and the female on the plug, so that the latter may "embrace the top of the capsule." In this arrangement the washer must be placed on the capsule; and if the cork stopper is dispensed with, a disc of cork or other material may be let into the hollow of the plug.

[Printed, 6d. Drawing.]

A.D. 1852, November 2.—N° 610.

NEWTON, WILLIAM EDWARD.—(*A communication.*)—"Improvements in the manufacture of capsules or covers for bottles and other hollow articles." The machine described in the specification is particularly intended for the manufacture of capsules, for which Mr. Newton obtained letters patent bearing date October 2nd 1852, No. 178; but "by merely altering the dies and matrices" it is capable of making all kinds of metallic capsules and also metallic boxes of any shape. The machine "is provided with six punch carriers set horizontally or at a slight inclination and one above another;" it is fed "with a band of laminated metal," which descends by its own weight through a guide channel; each punch acts upon the metal, and the last one imparts "the requisite conical form." The first punch carrier works in a tube, which carries a piece whereto "are screwed the different punches required for cutting out the blanks," and the tube works in guides. The other punch carriers work in similar guides. Opposite each punch is a matrix; their diameters "gra-

"dually decrease from the first to the last operation." The matrices "are fixed upon plates," which "are set in steps one "below the other." Opposite the first matrix is a second, composed of (1) a plate "having an opening corresponding to the "form of the screw stopper," (2) a tube on the end of a rod which has a screw at its upper end. The blank "receives its first "impression" in the first matrix, "through which it passes, and "has the incipient form of the screw stopper communicated to "it" in the second; it is at the same time pierced by the end of the punch, and the piece punched out makes its exit from the tube through a "discharge aperture." The rod discharges the capsule from the matrix; the capsule falls into a channel which conducts it to the next matrix, and a stop-piece holds it in position. The capsule passes in a like manner from one matrix to another and is discharged from the machine by a plunger which is worked by a rod. Both rods are worked by levers which are acted upon by cams.

The driving shaft, the fast and loose pulleys, the eccentrics for working the punch carriers, the bevel wheels for working the cams, the springs employed, the connection of the various parts, and "a peculiar method of constructing the punches, which may "if required be adapted to the machine," are all explained in the specification.

[Printed 1s. 2d. Drawings.]

A.D. 1852, November 5.—N° 655.

COUSENS, ROBERT BOOTY.—"Improvements in machinery "for cutting corks." This invention consists in combining the knife, the feeding apparatus, and the holder, "which for the most "part, separately, are similar to what have before been used," in the following manner:—The knife "is caused to reciprocate constantly in the same plane;" motion is imparted to it on a bed by a rocking lever and a connecting rod; and from its reciprocating motion "are derived the movements by which the pieces "of cork are fed into the machine, cut into the required form, "and released when finished."

The feeding apparatus (into which the pieces of cork are put by hand in succession) "is varied in position according to the "size of the piece of cork next to be cut."

The holder is composed of two axes, one for each end of the

piece; one is called "the driving holder;" the other "is cupped " on its face," so that one end of the piece "is penetrated a short " depth by the projecting ring-shaped edge, the end of the cork " and bottom of the cup being in contact." In addition to their rotary motion, the bearings of the holders "have a rising and " falling movement in a plane at right angles to the plane of the " knife's movement when cutting the cork into cylinders;" and, according as the succeeding pieces are larger or smaller than the preceding ones, "so will be the distance of the holder from " the knife."

The novelty of the invention consists in "the size of the piece " of cork (next to be cut) being the cause of gauging and setting " the feeding apparatus holder correctly to the knife."

The various parts of the machine, whether (1) the pieces are " of such a thickness as to require no adjustment of the apparatus " to accord with it," or (2) of different thicknesses, so that they require "to be at once accurately centred and brought" within a proper distance of the edge of the knife, or (3) for cutting the pieces into cylindrical or conical shapes, also modifications of sundry parts, are described at length in the specification.

[Printed, 8d. Drawing.]

A.D. 1852, November 9.—N° 681. (\* \*)

HEATHCOTE, JAMES ARNOLD.—(*Provisional protection only.*)  
—"Certain improvements in the mode of exhausting siphons or " pipes for drawing off fluids."

The object of this invention is the so applying a ball valve to a siphon that by means of it the air may be exhausted from the siphon on the first passage of the fluid up its ascending leg. "For " this purpose when a ball valve is employed, a valve seat with a " light ball over it & fitting into it is adapted and applied to " the lower end of the ascending leg of the siphon or pipe, the " upper range of the ball being limited by an arched metal cross, " into or against which the ball is driven by the pressure of the " fluid upon its under surface." A stop cock may be applied to the descending end of the siphon.

[Printed, 4d. No Drawings.]

A.D. 1852, November 22.—N° 821.

BLAIN, JOSEPH.—(*Provisional protection only.*)—"A new system " of corking." The inventor uses two corks, each "about  $\frac{3}{4}$  of

“ an inch long, with a hole in the centre to receive a piece of hard wood in the shape of a cone,” and pierced through with a silvered or tinned iron wire which is “ folded back and brought round to the opposite side, making a small split on the side of the cork to imbed it in the cork.”

The bottle is filled “ to about 2 inches from the top of the neck ;” one cork is then pushed in “ by means of an enfonçoir ” made at its lower end with a tube which enters the hole in the cork. The tube carries a ring and is pierced at its upper end with two holes “ which are made for the escape of the air that has remained in the neck.” When the liquid appears at the two holes, the enfonçoir is withdrawn, the conical piece of wood is “ pressed gently in,” and the wire (previously formed into a loop) is “ pressed down on the cork.” A thin layer of melted sulphur, wax, or other suitable substance, is poured upon the cork, then pure alcohol “ to the height of  $\frac{2}{3}$  of an inch,” and then the other cork is pressed in.

Sometimes only one cork is used ; it “ ought to be nearly  $1\frac{1}{2}$  inches long,” and should be put in “ so as to leave a space at the orifice of about  $\frac{1}{2}$  of an inch ;” this space is to be filled with sulphur, wax, &c. &c.

For the preservation of wines in wood “ the same system is made use of by adapting to the cask an embondoir of thick glass.” This embondoir “ is filled to the top of the neck ; afterwards aromatized olive oil is poured to fill the neck with the exception of a space it is necessary to put the cork in.”

[Printed, &c. Drawing.]

A.D. 1852, November 26.—N° 873.

GLOVER, CHARLES CLAUDE.—(*Provisional protection only*).—“ A system of stoppering instantaneously bottles and other vessels used for containing aerated liquors.” Two systems are described.

In the first an inverted cone is placed in the neck of the bottle. The lower portion of the cone is connected to a tube which descends into the bottle. The upper portion is surrounded by an india-rubber socket “ closing the space between the cone and the bottle ;” it is covered by an india-rubber washer, by another of metal, and then by another of india-rubber. A piece “ provided with a conduit ” is put into the cone, and held by a capsule.

which is passed over the rim of the neck and secured by a screw-ring. The piece "has at its joint" a lever, whose lower part is furnished with a disc "fixed or set" by a socket "containing a washer of india-rubber;" this washer presses on the inner extremity of the conduit so as to close it. "To fill or empty the bottle" it is sufficient "to press on the exterior part of the lever."

The second system:—The top of the bottle is covered by an india-rubber washer, which is "pierced by an elongated opening" for the passage of the conduit and the lever. The cone and its fittings are dispensed with; the capsule and screw-ring are retained; the lever "is provided and worked as before;" but "to empty the bottle it must be turned upside down."

The metal parts are usually made of pewter or of metal "not oxidable or covered with metal possessing that quality."

[Printed, 6d. Drawing.]

A.D. 1852, December 7.—N° 984.

CHALLINOR, THOMAS.—"Improvements in apparatus to be applied to decanters and other bottles to facilitate the running off liquids therefrom." The apparatus, which may be made "in very ornamental forms," can be fixed to decanters and bottles either temporarily or permanently. The principal parts are a stopper, a weighted lever, and a spout. The stopper moves on an axle, and is connected by a rod to the lower end of the lever. The lever is suspended from a bracket; the weight is at the upper end, and, when the decanter is upright, keeps the stopper closed, but opens it when the decanter is "inclined forward." The apparatus is fixed by a tubular portion of it which enters the mouth of the decanter, "and by the action of a binding screw and lever." A washer between the apparatus and the decanter keeps the parts fluid-tight.

[Printed, 6d. Drawing.]

A.D. 1852, December 8.—N° 993.

FONTAINEMOREAU, PETER ARMAND LE COMTE DE.—(*A communication.*)—"Improvements in the machinery for applying metallic capsules." The framework is of wood or cast iron, set in a wooden platform. A drum, "formed with a collar" so that "it can be moved in a suitable bearing formed

"in the standard or framework," is perforated with three holes to admit of the insertion into each of a spiral spring; and in its middle is a hole or recess "to receive a spiral spring attached to a circular metal disc." The recess is of such a depth that the disc, when at rest, "is kept flush with the top" of the drum. A face plate is screwed or otherwise secured to the drum; in it are holes "opening into the interior of the spiral springs," and another hole in the middle rather smaller than the disc. A cord is passed through each spring; one end of each is fastened to a block, "so that when it is pulled back again it cannot be withdrawn," but acts upon its spring; the other ends are fastened to a cross bar which is attached to two springs. The cords pass over pulleys, and when a handle (belonging to the drum) is moved to a certain position, they "cross each other in the centre of the face plate." A carriage, "which is intended to carry the bottle to be capsuled," is mounted on two bars, one end of which rests on a projection, whilst their other ends pass through a standard and are connected by cords to "two drum wheels." A handle is attached to the spindle which carries the drum wheels, so that "by raising the handle" the wheels "are partially turned round."

The action of the machine is described in the specification.

[Printed, 6d. Drawing.]

A.D. 1852, December 16.—N° 1081.

BELLFORD, AUGUSTE EDOUARD LORADOUX.—(*A communication*).—"A new system of stoppering bottles and other vessels." In the provisional specification the stopper is of glass or other suitable substance, and is pierced with a hole through the middle or side. "This stopper is inserted with a vulcanized india-rubber washer round it into the neck of the bottle." A cap of vulcanized rubber is placed over the top of the stopper and tied down under the rim of the neck with a wire. "When the liquid in the bottle expands, the superabundant portion passes through the aperture" and presses against the cap; "the latter expands and prevents the bottle from bursting."

In the final specification the stopper, of wood, metal, or other suitable material, "is cylindrical at the base and is at this place of a sufficiently small diameter to enter freely into the neck of the bottle." To this stopper "is firmly fixed a piece of india-

"rubber tubing," whose lower extremity "is longer than the stopper," and "is made to surround the neck." Before inserting the stopper the bottle is to be filled so that "the liquid may run over," and "no air may remain at the top of the bottle." The stopper is fastened with string, the ends of which are fixed at the top of the stopper with wax. The rubber "must be raised over the string," and the string must be "left slack enough to allow the cork to rise when the liquor is dilated."

"The same system is applicable to bungs for casks."

[Printed, &c. Woodcut and Drawing.]

A.D. 1852, December 23.—N<sup>o</sup> 1146.

MALINAU, NICOLAS.—"Improvements in stopping or covering bottles, decanters, pots, and other receptacles of glass, porcelain, and earthenware, and in the machinery connected therewith." Projections and corresponding grooves or indentations "of any required form and dimensions" are made on the outside or inside of the bottle neck and the stopper; "if the neck has the projections externally the stopper is made to lap over." To effect a more perfect closing an elastic washer is applied between the neck and the stopper.

Another method:—The two ends of a metallic cross piece are introduced into holes of a dovetailed form in the sides of the neck, and a screw is set in the middle to press down the cork on the elastic washer."

A press for moulding the necks of bottles, &c. :—A lever puts in motion a circle which is bolted to a platform. The bolts pass through grooves in the circle and "guide it in its circular movement." The circle is provided "with three other grooved pieces of an oblique form," which direct "large drivers" carrying pins that slide in the grooves. Underneath the lever is "an abutment which directs a bolt." The bolt in its motion causes a lever to fall or rise and move a piston whereon two cones are fixed. The upper cone shuts "small drivers;" the lower one opens them (for the withdrawal of the neck) by causing them to enter a space "after pivoting on a crank." The form of the projections, &c. "is cut in the small drivers which produce them on the neck." By modifying the construction of the large and small drivers "different forms of stoppings" may be produced.



The matrix for moulding stoppers is composed of two segments hinged together and provided each with a handle. The handles are tightened or loosened by a rod working in a groove and secured to a bar that slides on them. The material is put into an "orifice," the matrix is shut, and the material is pressed with a punch, "which is prepared for the kind of moulding required."

[Printed, 2s. 2d. Drawings.]

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## 1853.

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A.D. 1853, January 7.—N° 49.

JAMES, HERBERT GEORGE. — (*A communication.*)— (*Provisional protection only.*)—"Improvements in the mode of securing " and retaining corks and stoppers in bottles." A ring is screwed round the bottle neck, and to the ring are secured the ends of a strip of sheet iron or other metal. "By having a thumb piece on " this strip it may be pushed over the cork, thereby releasing the " same without injuring the fastening, which will serve again, " having merely to be turned back again over the newly inserted " cork."

The lip on the bottle neck may be shaped to hold the ends of the binding strip, and "obviously many slight deviations may be " made from the general principle of this invention."

[Printed, 4d. No Drawings.]

A.D. 1853, January 10.—N° 62. (\* \*)

DUNCAN, CHARLES STEWART.—"Improvements in rendering " bottles, jars, and other like receptacles air and water-tight, and " for raising and measuring the liquid contents thereof," "upon " the principle of hydro-pneumatics in combination with mechanical arrangements," which may be described as follows:—"The body of the vessel "has a metal collar cemented to the neck." "This collar has a square threaded screw formed around it" for the purpose of connecting thereon a cover "which has a corresponding thread or screw formed therein, and there is a piece " fixed to or formed upon the said cover, around which a ring " or collar" of gutta percha, caoutchouc, or cork, &c., is placed and securely affixed thereto, the said collar being in fact the

stopper of the bottle. "There is a screwed hole formed through "the cover," into which "a fountain" resembling in shape a thistle funnel is screwed. To the bottom of this fountain a piece "of cork, gutta percha, caoutchouc, or other suitable elastic "material or composition is fixed," an elongation as it were of the fountain. If the cover be unscrewed, then the space between the under side of the said cover and the surface of the liquid will be enclosed, and thereby cause a partial vacuum in the vessel, and the air will pass down the fountain and through the liquid into the space above the liquid, and on screwing the cover again the liquid will be pressed up the fountain. Should the quantity of liquid raised be more than is required, "the surplus may be "returned into the bottle by partially unscrewing the fountain."

Modifications of the above are described.

[Printed, 1s. Drawings.]

A.D. 1853, January 15.—N° 108. (\* \*)

HALKETT, PETER ALEXANDER.—(*Letters Patent void for want of final Specification.*)—"An improved construction of ink-stand."

"The object of this invention is to preserve writing fluids when "contained in inkstands in their normal state. This I effect by "stoppering inkstands in such a manner that while the evaporation of the fluid will be prevented, the constant inconvenience "experienced with stoppered inkstands, arising from the adherence of the stopper to the neck of the ink vessel (owing to the "glutinous accumulations within the neck) will be avoided. To "this end I fit a cap upon the neck of the inkstand, after the "manner of the cap of spirit lamps, and make the mouth of the "inkstand of the form of a hollow inverted truncated cone, "whereby the pen is guided to the ink. Within this cone I fit "if thought desirable (as will be the case when the inkstand is "to be moved from place to place), a stopper which will retain "the ink in its reservoir."

[Printed, 4d. No Drawings.]

A.D. 1853, January 28.—N° 215.

SCOTT, JOSEPH.—"Improvements in closing or stoppering "bottles, jars, and other receptacles." A screw thread is cut or moulded on the inner surface of the neck, and a corresponding screw thread on the outer surface of the stopper. The stopper is

formed "with a suitable head to facilitate adjustment," and beneath the head with a groove for holding "an annular jointing piece of some soft or elastic material."

When the stopper is screwed into the neck, "this elastic surface bears down on the end surface of the neck and preserves a tight junction."

[Printed, *6d.* Drawing.]

A.D. 1853, February 2.—N<sup>o</sup> 282. (\* \*)

BELLFORD, AUGUSTE EDOUARD LORADOUX.—(*A communication.*)—(*Provisional protection only.*)—"A stoppering apparatus for bottles containing liquids, of which small quantities are generally poured out at a time." It is composed of an india-rubber tube, fixed by one of its extremities to the base of a conical top." "This base is pierced with two holes in which are fixed two small india-rubber tubes. These tubes are kept separate by a nob at the top of the conical top." To adapt this to a bottle the tube is passed over the neck of the bottle. "When the bottle is inclined" liquid comes out of one tube, while air enters the other. To close the bottles, the extremities of the tubes are brought down and pressed against the sides of the bottle, and a ring of india-rubber is passed over them.

[Printed, *4d.* Woodcut.]

A.D. 1853, February 10.—N<sup>o</sup> 359. (\* \*)

ASH, ROBERT.—"Improvements in stopping bottles and other vessels." This invention consists in "making a stopper of two parts, one to enter the neck of a bottle or other vessel, and the other to cover the opening of the part which enters the neck of the bottle or vessel. The part which enters the neck is tubular, and is coated with a yielding elastic substance" "on the outside, by which it will enter and fit tightly into the neck. Near the upper end of this tubular part is formed a flanch. Over this tubular part is placed a cap or cover, which is formed to fit the upper end of the tubular part of the stopper; and the cap is provided with a flanch to correspond with the other flanch, and between such flanches a cement is applied to fit the cap or cover, which, in some cases, is lined with a yielding elastic substance."

[Printed, *6d.* Drawing.]

A.D. 1853, February 12.—N° 369. (\* \*) •

MELLISH, THOMAS ROBERT.—(*Provisional protection only.*)—

Improvements in the construction and mode of closing scent “and other bottles.” These improvements consist, first, in “constructing scent bottles of glass with large mouths for the “convenience of filling, and closing the same with a hollow “stopper open at the lower end, and perforated on the upper “surface for smelling to, the escape of scent when not required “being prevented by a flat glass plate mounted in a suitable cap “or cover.” “An opening for filling is provided at the opposite “side or end of the bottle, closed by a stopper formed by placing “two or more rings or discs of glass and indian rubber or cork “alternately upon a central pin or axis. The discs of glass are “made a trifle smaller than the neck of the bottle, so that the “indian rubber or cork alone takes a bearing and forms a joint “without any risk of sticking fast in the neck.”

Secondly, “in the application of springs to the stoppers of scent “and other bottles, so as that the springs shall maintain the stoppers in an open or closed position, and prevent their being detached from the bottle.”

[Printed, 4d. No Drawings.]

A.D. 1853, April 12.—N° 876. (\* \*)

MONDOLLOT, AUGUSTE.—(*A communication.*)—(*Provisional protection only.*)—“Improvements in filling vessels with aerated “waters, and the apparatus employed therein.”

“This invention consists of an improved valve,” “which consists of a short tube working loosely with a tubular collar; “the internal tube has two or more lateral openings formed in it “to allow the liquid to enter.” A small washer of vulcanized india-rubber “is fitted to the inner extremity of the valve “tube, and this washer is pressed upon the surface of the “tubular collar by the pressure of the fluid within the vessel. “This valve is fitted to the bottom of the vessel, and when it is “to be filled the vessel is inverted, and the short tube drops “down a short distance, and exposes the lateral openings which “allow the liquid to enter.”

[Printed, 4d. No Drawings.]

A.D. 1853, April 13.—N° 885.

ARCHER, ALEXANDER EDWARD DUDLEY KNOX.—(*Provisional protection only.*) — “Improvements in apparatus for applying “metallic capsules.” A ring of gutta percha or other suitable material is cast or moulded so that its inside fits the outside of the bottle neck. The ring is cut through on one side in a slanting direction, and the inventor considers “an ellipsis to be the “best shape in which the ring may be formed before it is “cut.” The ring is then fastened to a stand, and a cord secured to a pin or screw passes over the ring and is attached at its other end to a treadle.

The bottle neck with a capsule on it is put into the ring, and the pressure “forces the capsule into the indentations in the “neck.”

[Printed, 8d. Drawings.]

A.D. 1853, April 16.—N° 925.

COOKE, JOSEPH, and COOKE, WILLIAM.—“New or improved “machinery for cutting or shaping corks and bungs.” The patentees claim “the construction of machinery for cutting corks “and bungs of a cylindrical, conical, or elliptical figure.”

A vertical shaft carries fast and loose pulleys and a horizontal circular cutter. Two spindles, with roses at their inner ends for holding the piece of cork, and “similar to those constituting the “ordinary lathe head,” work in bearings fixed on a plate which slides in a dovetail on the bed of the machine. One spindle “is “capable of a sliding motion for the purpose of fixing and dis- “engaging the cork;” it is drawn back by a handle, and returns to its position by means of a spring. Rotatory motion is communicated to the other spindle from the shaft by a band and an axle carrying a worm which engages in the teeth of a wheel. The axle “may be thrown into and out of gear with the main “shaft” by means of a clutch box which is operated upon by a rod. The bed plate, as well as the axle, “is capable of motion “in a vertical plane, whereby it may be made horizontal or pu “in an inclined position” by making it turn on pins, and by fixing it in position with other pins. The exact distance of the lathe head from the knife is determined by a screw.

To cut corks or bungs of a cylindrical figure, the bed plate is fixed horizontally; for a taper or conical shape it is fixed in an inclined position. If “an elliptical instead of a circular section”

is required, "the plate carrying the lathe head is made to turn "upon a joint," and is pressed upward by a spring; a cam, "having the figure which it is intended to give the cork," is fixed on the spindle (which is in gear with the shaft) and bears against a roller on a fixed guide.

The machine "may be made double" by placing a lathe head on each side of the cutter. The pieces "may be supplied on an "endless band." The action of the machine is described as worked by hand, but "the same may be performed by mechanical "means."

[Printed, 6d. Drawing.]

A.D. 1853, May 6.—N<sup>o</sup> 1119.

JACOB, GEORGE WILLIAM.—"An improved manufacture of "metallic covers or seals for bottles, jars, and other like vessels, "and in applying or affixing them." This invention relates to the manufacture and application of ornamental capsules. The metal used is "any fusible metal or alloy of metal, giving a preference "to what is called type metal."

Three methods of manufacture are described. In the first, a hand-mould is employed; it is made by preference of brass, "in "two, three, or more divisions as found convenient;" the pattern or design is "engraved on or sunk in the surfaces thereof," and the sides are coated with "crocus or peroxide of iron, or other "suitable powder."

In the second, the apparatus consists of (1) a table carrying a tapered iron box lined with wood which is "coated with glue "and black-lead and dried;" (2) a metal plate (at the bottom of the box) into which a core is inserted; (3) two handles, on each of which is "one half of the matrix showing the design engraved "thereon," also a wedge which passes under "an angular piece "of wood" on the front of the table; (4) "a hinged fly or flap "on which a design may be engraved or placed;" (5) an iron pot containing the molten metal; (6) "an iron vessel floating in "the molten metal;" (7) a lever connected to the iron vessel and to a treadle; (8) a "conducting tube for the molten metal."

In the third, the metal is cast in strips with patterns or devices thereon; or thin strips of metal are pierced with figures or patterns. The strips are bent round a core "covered with paper and coated with glue and black-lead," and are compressed with pincers lined "with cork or felt and coated as before described." The pincers

have a fly or flap; the molten metal "being poured in forms the " top in the space left for that purpose," and the fly is then quickly pressed upon the metal.

Sometimes the capsules are cast in a flat form; the middle is placed on the top of the bottle; "the star-like portions are pressed down against the neck, and are secured by a ring or band of metal. The inner side of the capsule may be coated with some adhesive substance.

The apparatus for pressing capsules tight to the necks of bottles "consists of three or five antifriction rolls covered with vulcanized india-rubber or other suitable flexible material;" the pressure is effected by means of a treadle, aided by a disc at the back of the frame.

Or the bottle neck with a capsule on it may be inserted into a hole made in a piece of wood, "before which hole a piece of india-rubber or other elastic material is placed tightly on a wooden or "other frame."

[Printed, 8d. Drawing.]

A.D. 1853, May 23.—N<sup>o</sup> 1269. (\* \*)

BROWNE, JOHN HARCOURT.—"Improvements in apparatus "for bottling or supplying vessels with fluids." This apparatus consists "of a funnel-formed receiver, with a tube descending "into the bottle or vessel; the exterior of such tube where it "enters the neck of a bottle or opening into a vessel, is partly "covered with vulcanized india-rubber, or it might be other "elastic material. Down the interior of this tube descends a "hollow rod or tube with a valve at its end, by which the passage "of fluid from the funnel can be stopped at pleasure by raising "the valve. The lower part of the tube which enters the neck "or opening into a bottle or vessel fills or occupies part thereof. "When the liquid has been allowed to flow till a bottle or vessel "is nearly full, the air which cannot get away except through "the valve tube is, on the liquid rising above the end of the "tube, stopped, and the filling is stopped also, and the apparatus "may be removed without loss of liquid by raising the valve."

[Printed, 6d. Drawing.]

A.D. 1853, June 3.—N<sup>o</sup> 1367.

DAFT, THOMAS BARNABAS.—"Improvements in inkstands." A ring of vulcanized india-rubber or other elastic fluid-tight sub-

stance is fixed air-tight round the mouth of the ink vessel. A dipping cup with a descending tube fits air-tight into the ring but admits "of being moved up and down through such mouth-piece." A cover "fits in the mouth of the vessel when the dipping cup is removed, and it is also suitable for covering the dipping cup."

[Printed, *ed.* Drawing.]

A.D. 1853, June 13.—N<sup>o</sup> 1435.

HOPKINS, ROBERT.—"Improvements in machinery or apparatus for cutting and shaping cork, wood, and other similar substances." This machine may be worked by a treadle or by other power; it "may consist of one cutting apparatus or single action, or two or more of the same;" the one described has "double action or double cutting apparatus." One cutter makes "taper corks," the other "parallel corks;" the face of each "is nearly circular and triangular on the edges with a short parallel bearing on the inside next to the cork," and each has "a side cutter" to cut off "the surplus of the material" and to "lessen the friction of the cutters." The taper-cutting tool has two arms guided in a ring which revolves in a standard; these arms "are made to a taper outside and with a spring," so that when they are pressed forward through the ring "they are compressed to a smaller diameter, thereby cutting the cork smaller or taper as it goes forward." The cutters have a circular and a horizontal motion; the former by being fixed to hollow revolving spindles, the latter by aid of a crank, shaft, tangent wheel and worm, and connecting rods. Finger rods pass through the hollow spindles, and by them "are guided to hold the material till cut." The material, being previously cut to the required size, is put into two hoppers, and the finger rods take out the pieces "at the bottom when the hoppers are moved forward on their axes;" when the hoppers are moved back again, "another piece drops down in the place of the one last taken out." The movement of the hoppers is effected by a cam, two levers, and connecting rods, and the cam "is so adjusted with the movement of the crank" that each hopper "only brings forward one piece" at the time required. When the spindle with its cutter is moved back, the finger rod is drawn back, "the cork just made drops out," and another piece is fed in and held in place by the action of a spring on a fixed collar.



The mechanism necessary for working the machine is fully described in the specification.

[Printed, 10d. Drawings.]

A.D. 1853, August 10.—N° 1859.

TAYLOR, JOHN GEORGE.—(*Provisional protection only.*)—"Improvements in desks, work boxes, dressing cases, tea caddies, and similar articles, and in the arrangements and fittings thereof." The body of the article is made of any cheap material and covered with what is technically known as "agate buttons." In a writing desk the inkstand is fitted with a cover of india-rubber or other elastic substance "contrived to completely cover up the ink." The middle of the cover is perforated for the entrance of the pen, and the aperture "fits to and embraces the pen;" and "to give this elastic cover a better effect it is made in two layers set one upon the other, and each slitted through at right angles to one another."

[Printed, 4d. No Drawings.]

A.D. 1853, September 28.—N° 2227.

LABAT, JEAN ALEXANDRE, junior.—"An improved system of stoppering vessels and bottles." The neck of the bottle is made with a rim round which there is a groove. A collar, "chased with screwthreads which are perpendicular on the under side," and formed with a fillet round its inside, "adjusts itself to the neck;" for this purpose the collar is cut through on one side. A top-piece, cut with a female thread on the inside, screws on to the collar; the upper portion is of metal or of wood, and a washer (one or more) is inserted between the upper portion and the top of the bottle rim. The upper portion carries two lugs to aid the screwing or unscrewing; this operation may be performed with any leverlike instrument, and the patentee has devised two keys of flat iron, either of which may be employed. He has also invented a third key which "serves to prevent the collar from turning on the bottle," the collar carrying two lugs on opposite sides, and recesses in the key fitting the lugs.

[Printed, 8d. Drawings.]

A.D. 1853, October 5.—N° 2275.

BETJEMANN, HENRY JOHN.—"Improvements in apparatus for fixing capsules on the necks of bottles and other vessels."

A treadle attached to a framing and borne upwards by a weight carries two rods jointed to arms. The arms are fixed to the squared ends of pieces which are mounted in bearings on the framing and have each attached to them several springs. One end of a band is fixed to each spring, and the other end to the framing ; there are thus two sets of bands, and the bands in each set "are bent in opposite directions." The bands are kept in position by pulleys or guides, and when out of action rest on "a filling piece." Jaws covered with vulcanized india-rubber "offer a soft substance to the neck of the bottle or vessel and "capsule" and prevent the bands "from escaping forwards;" they are caused to descend during the pressure of the bands on the capsule by means of links and a spring rod which is carried by the treadle. The bottle-holder is mounted on a frame capable of a to-and-fro action between friction rollers connected to the framing ; it is provided with a handle by means of which it is made to revolve, and its frame has at all times a tendency to be drawn forwards by weights "to the opening formed by the "bands." The holder has (by preference) within it strips of rubber "in order to offer additional contact to insure the revolving "of the bottle." When the bottle with a capsule on the neck is put into the holder, it is drawn forward into the opening formed by the bands until the neck arrives at a back plate which is covered with vulcanized rubber "and thus forms a cushion for "it to revolve in."

The method of working the apparatus is described.

[Printed, 1s. Drawings.]

A.D. 1853, October 8.—N<sup>o</sup> 2302.

ARCHER, ALEXANDER EDWARD DUDLEY KNOX. — "Improvements in apparatus for applying metallic capsules." The patentee secures the capsule by means of a ring of gutta percha or other material "possessing a certain amount of elasticity, but "at the same time of sufficient hardness to force the capsule into "the indentations on the neck of a bottle." The inside of the ring must be capable "of exactly fitting to the outside of the "neck;" for this purpose it should be "rather larger in the round "than the size required to fit the neck," and should have an "opening on one side in an oblique direction" so that it can be subsequently reduced by pressure. The patentee considers "an "ellipsis to be the best shape in which the ring may be formed."

The ring is screwed or otherwise fastened to a stand, and a cord secured at one end to a pin passes over the ring and is attached at the other end to a treadle.

The neck of the bottle with a capsule on it is put into the ring, and pressure forces the capsule into the indentations in the neck.

[Printed, 8d. Drawings.]

A.D. 1853, October 12.—N<sup>o</sup> 2346.

BRADLEY, GEORGE.—“Improvements in the stoppers or covers for bottles, and in the tools or apparatus for manufacturing the same.” The bottle neck is made at the upper portion, to which the stopper is to be applied, with a flange “cut away on opposite sides of the neck flush with the neck.” The stopper is in the form of a cap with an internal flange cut away in a manner corresponding to the flange on the bottle neck “to admit of the insertion of the bottle neck and of the locking of the cap and bottle together.” A disc of cork or other slightly yielding material is placed in the cap “to receive the pressure of the mouth of the bottle.” To make an air and water-tight joint a ring of cork or other elastic substance “may be placed on the bottle neck above or below the flange or both.” If the cap is made of glass, a ring of some yielding substance should be applied to the bottle neck.

A mould or die to form the exterior of the cap is prepared “in the usual manner;” the core pin is divided into three parts, one of which is attached to a table, and the other two slide in dovetails, one in each side of the central part. The melted material is poured in; and when the mould is removed, the cap “is lifted up off the table carrying with it the two dovetailed pieces.”

[Printed, 6d. Drawing.]

A.D. 1853, October 14.—N<sup>o</sup> 2366.

MCLEAN, ANDREW, and RAE, WILLIAM FRASER.—“Improvements in apparatus for the manufacture of aerated liquids.” The patentees describe first their improved apparatus, and secondly an apparatus attached thereto for bottling the liquids. Connected to the condenser by a pipe (fitted with a stop-cock) is a short cylinder “fixed into and passing through the base or table”

whereon the apparatus stands. The bottle "is held up against the lower open mouth, which is lined with leather or other suitable material;" when filled the stopcock is shut, and the cork is forced down into the bottle neck by a plunger. The plunger "is formed with a short point on its under side to receive the cork;" it has a crosshead working upon guides in two short standards. The crosshead is connected to the crank of a spindle which has a handled lever keyed upon it. The spindle has formed upon it a catch, and one of its bearings carries a corresponding stop, which prevents the lever "from falling over when the plunger is raised."

[Printed, 8d. Drawing.]

A.D. 1853, October 29.—N° 2506.

BETTS, WILLIAM.—"Improvements in machinery for manufacturing metallic capsules." The patentee claims four improvements; the first relates to "brackets for supporting the die;" it consists "in setting this latter on springs" to allow it to assume the "necessary position for receiving the punch."

The second relates to the sliding bolt, "which being acted upon by a weight pushes the capsule out of the die." The bolt is fitted with a piece of cloth or other substance for "the lubrication of the die;" it is propelled by the punch, and is afterwards detached from the die by the action of the weight.

The third "relates to the motion of the carriage holding the capsules, and consists in standards fixed to the body of the machine and serving to hold the swinging frame during the alternate motion it receives from the excentrics set on the main shaft." A connecting rod is attached to the frame and "gives motion to the carriage by means of a bent lever."

The fourth relates to the mode of drawing off the capsules from the punch "by means of the three excentrics;" a spring is employed, "which can be withdrawn and replaced at will."

[Printed, 10d. Drawings.]

A.D. 1853, November 2.—N° 2534. (\* \*)

TAYLOR, WILLIAM.—(*Provisional protection only.*)—"Stopping of bottles containing aerated liquids."

This invention consists of "a stopper of metal, gutta percha, ivory, or wood, or any other hard substance made hollow and

“ plugged or stopped at the end entering the bottle, and perforated with holes about the middle of the cylindrical part of the stopper, so as to allow of the passing of liquids or gases through the perforated holes; which stopper is to be surrounded with an elastic ring made of india rubber or vulcanized india rubber, and which stopper, when passed into the bottle, is, with the ring of india rubber, held in its place by a collar of metal surrounding the neck of the bottle, and having two projecting arms with clamps, so made as to admit of a proper degree of motion for the elevation or depression of the stopper for the admission of the liquids and gases, or for drawing them off, which drawing off or filling is effected by the rolling motion given to the india-rubber ring. By depressing the stopper the ring is rolled over above the perforated holes in the stopper, and by elevating it the ring is rolled so as to be below the holes, thus effectually securing the liquids and gases.”

[Printed, 4d. No Drawings.]

A.D. 1853, December 20.—N<sup>o</sup> 2955.

CAMPBELL, JAMES HUNTER.—“ An improvement in machinery for cutting corks.” The improvement consists “ in the construction of a self-acting feeder and its adaptation to machines of a similar description to the machine known as ‘ Gilbee’s ‘cork cutting machine.’ ” The feeder is bracketed to the machine; it is composed of (1) a trough down which the pieces pass; (2) a carrier, the use of which is “ to receive the lowermost cork from the trough and carry it down to the holders;” (3) a hook jointed to the lower end of the carrier “ to prevent the cork from slipping out ” and kept in place by a spring; (4) sliding rods (by which the carrier is moved) “ placed underneath the bed of the trough ” and acted upon by coiled springs which press them downwards; (5) a lever “ placed over the lower end of the trough in such a manner as to impinge upon the piece of cork next to that resting on the carrier,” and so to prevent the piece from escaping when the carrier descends; “ the return of the carrier liberates the cork from the hold of the lever.”

The movement of the carrier “ is regulated by a cam attached to the boss of the driving wheel ” of the machine; the cam acts upon the carrier by rods and levers. The coiled springs rest at one end against a cross piece through which the rods slide, and at the other end against a bar which connects the rods. An

adjusting screw regulates "the extent of the upward movement of the carrier." A tooth "projecting underneath the carrier" effects the upward movement of the carrier "through the action of a lever."

Some parts of the foregoing may be varied without departing from the principles of the invention.

[Printed, &c. Drawing.]

1854.

A.D. 1854, January 7.—N° 43. (\* \*).

TAYLOR, JOHN GEORGE.—(*Provisional protection only.*)—"Improvements in writing apparatus."

The second part of these improvements relates to an inkstand or holder which "is arranged with an elastic cover piece of india-rubber or similar material, contrived to completely cover up the ink." "Through the centre of this elastic diaphragm a small aperture is made for the entrance of the pen in passing down to the ink, and as this aperture fits to and embraces the pen, the latter is always kept clean and free from superfluous ink." "And to give this elastic cover a better effect, it is made in two or more layers set one upon the other, and each slitted through at right angles to one another, so that the pen is more closely embraced."

[Printed, &c. No Drawings.]

A.D. 1854, February 15.—N° 367. (\* \*)

JENNINGS, THOMAS.—"Improvements in stoppers for bottles." In these stoppers a hollow plug of wood, which will yield sufficiently to permit of its taking the irregular shape of the neck of the bottle in which it may be inserted, is used as a core. When bottling wine which is required to ripen, this hollow plug is used "without any addition, further than a square head, which is in one piece therewith, and as the air will permeate through this stopper, the ripening of the wine will proceed as when contained in a cask." For some other liquids, as where acid is present, the lower end of the hollow plug is closed with an inverted cap of gutta percha or other analogous gum, and thereby contact is

prevented between the wood and the liquid. Or, instead of a wooden plug, a hollow gutta percha plug having the like yielding property is used, and this is secured to a solid head of wood, slate, or other substance which will admit of the holding down wires being inserted therein. When bottling liquids "containing an alkali, as soda water, it is desirable to prevent contact between the liquid and the gutta percha or other analogous gum, and to this end" so much of the gum as would otherwise be exposed to the liquid is covered with a thin coating of tin, or an alloy of tin, or with any other metal or metals not liable to corrosion from the liquid," "in which manner gutta percha or other analogous gum can be used in situations" "where, if exposed, it would detract from the quality of the liquid."

[Printed, 6d. Drawing.]

A.D. 1854, February 27.—N° 475.

BROOMAN, RICHARD ARCHIBALD.—(*A communication.*)—"An improvement in the manufacture of tin foils or sheets." These sheets are applicable for "caps for bottles;" they are produced "in such manner that each metal will be kept perfectly distinct," the tin only being exposed, "while the lead or inferior metal is incased within it."

"The ingot or slab for rolling" is formed in the following manner:—A metallic mould is prepared, and then a slab of lead "as much less in size than the cavity in the mould as is designed for the different proportions of the metals." This slab, "when suspended in the mould, will leave a clear space all round," and the tin "can then be poured in." Small blocks of tin, "of a length equal to the space left between the lead and the sides of the mould," keep the slab "exactly in the centre." When the whole space is filled with tin, the lead is completely incased; the blocks "combine with the fluid tin," and "the slab is now ready for the rolls and may be expanded into sheets and foils of any degree of thinness."

[Printed, 4d. No Drawings.]

A.D. 1854, March 2.—N° 508.

HOUSSART, RICHARD VINKELES, and HOUSTON, ROBERT.—(*Provisional protection only.*)—"Improvements in vessels to

"contain fluids." This invention relates principally to casks, and consists "in fixing and hermetically closing a bag of water-proof, flexible, or elastic material around the inner circumference (but loose from the vessel except at the point of junction)" about midway between the two ends, in such a manner that "when it is filled, the bag shall distend and form to a certain extent an interior vessel or lining to the upper portion."

The cask is filled "through one end instead of through the side, and the bag distends with the pressure of the fluid and fills the opposite end to that through which the fluid enters;" the top end is moveable, so that it may be taken off.

In the case of fermented liquors where it may be necessary to allow the escape of gas, the bag "may be connected with a false top," which "sinks as the fluid flows off, so that the cask is always full up to the false top, and atmospheric air is excluded."

[Printed, 4d. No Drawings.]

A.D. 1854, March 10.—N° 580.

MILL, WILLIAM.—"Improvements in inkstands or inkholders." This invention relates (1) to "the application of dipping cups and apparatus to inkstands or inkholders arranged in such manner as to close the ink passages," (2) to the "application to the air passages of inkstands or inkholders of apparatus consisting of air valves or stoppers which are kept closed by springs or elasticity," and (3) to the "making of inkstands or inkholders with the dipping cup arranged below the inner surface of the bottoms of the ink vessel."

The first is the only part which belongs to the present series. A short tube of vulcanized india-rubber "with several perforations or slit openings made through it" is cemented to the lower end of the dipping cup, and "the external end of the tube" is stretched over a solid bottom of gutta percha or other suitable material and cemented to it. Pressure of the pen on the bottom will cause the slits to open and allow ink to flow into the cup.

In some cases a thicker substance of india-rubber is used; the lower end of the tube is cemented to the gutta percha bottom, and the slits are opened "by an instrument with a handle." The lower end of the instrument is fixed to the bottom, and its stem moves in a bearing, so that "by moving the handle a short distance round," the bottom "is turned partly round," and the



slits are thereby opened. Many modifications of this arrangement are described in the specification.

[Printed, 1s. 2d. Drawings.]

A.D. 1854, May 13.—N° 1076.

SHAW, THOMAS GEORGE.—“Improvements in apparatus to “facilitate the decanting of wine and other liquids.” By means of this apparatus the bottle is held “in an inclined position to “facilitate the drawing of the cork,” and then steadily elevated “so as readily to decant the contents.”

A lever-frame “formed to receive a bottle” is pin-jointed at one end to a stand, and is held at any desired elevation by a “friction pulley with a ratchet wheel and catch.” The frame carries a collar (to receive the neck of the bottle) and a slide “capable of adjustment so as to receive different sizes of bottles.” A candle lamp is pin-jointed to the frame, “the light being thus “moved on a level with the flow of the liquid, so that the “process of decanting may be readily seen.”

The ratchet and catch may be dispensed with, and sufficient friction may be obtained in raising and lowering the frame “by a “break.”

If “greater steadiness of action than can be obtained by lifting “and lowering the frame by hand” is required, the frame is worked by a screw, “the nut through which the screw works “moving on axes or necks to admit of the screw being at all “times at right angles” to the frame.

[Printed, 1s. 2d. Drawings.]

A.D. 1854, May 15.—N° 1079.

DE STE. MARIE, JOSEPH VALENTIN HENRY.—(*Provisional protection only*).—“Improvements in the means and apparatus “for fixing capsules on bottles, vessels, or flagons.” A board is fixed in a vertical position, and a smaller one slides in guides thereon; the latter is drawn upwards by a spring and may be forced down by a treadle. The sliding board carries a loop, “which passes over the neck of the bottle;” the fixed board a similar loop, “which is looped into the first loop and passes “under the neck.” The ends of each loop are attached to bars which are forced apart by a spring, “so that when the sliding “board is allowed to rise, the loops open out.” The neck with

the capsule upon it is inserted into the loops ; the bottle is turned round by hand, "gradually advancing it so as to compress the whole of the capsule." A cross piece keeps the loops "from being displaced as the bottle is advanced," and a spring may exert a pressure on the top of the capsule during the operation ;" this spring may also serve to raise the sliding board."

Another method :—A revolving disc carries two jaws sliding in guides and drawn together by a spring or springs. The jaws are drawn apart, and the bottle neck with the capsule on it is inserted between them ; the spring presses the jaws upon the capsule, and at the same time the jaws are carried round by the revolution of the disc. The bottle is pressed gradually forward against a block "which is forced against it by a spring."

[Printed, 4d. No Drawings.]

A.D. 1854, May 18.—N<sup>o</sup> 1115.

BARLOW, CHARLES.—(*A communication.*)—"Improvements in the manufacture of metallic capsules for covering or securing bottles and other vessels." The capsules are made by pressing or moulding discs of metal upon a mandrel in a machine, "which in principle is similar to a turning lathe." The disc is held up to the mandrel by a spindle ; a lever presses upon the sides of the disc and rolls out the metal over the surface of the mandrel ; and the edges of the capsule are cut off by a knife attached to the machine. A number of discs "not exceeding six" may be put into the machine, "and all turned and finished at once ;" the layers of metal are "pressed successively one over another," and when taken off the mandrel require to be separated.

The machine may be fitted with from one to twelve mandrels ; the one described is fitted with five. Each axle carrying a driving pulley is supported in bearings and provided with an adjusting screw. On the inner end of the axle is screwed a mandrel "surrounded by a coil of wire," to which a metal plate is attached. A spindle passing through a bar has a screw-thread turned upon it, so that its position with reference to its distance from the mandrel may be regulated by a shifting handle. On the inner end of the spindle is a collar "made to turn easily upon the spindle." The bar which carries the spindle is connected to a moveable cross bar, and this "is attached to an endless screw" which is put in motion by a handle. The lever carries at its free end a roller ; the other end is "secured to a double sliding bar,"

to which a lateral motion is given by a lever, and "a transverse motion, or one parallel to the back of the machine" by a shaft and rack and pinion actuated by a handle. The action of the machine is described. The edges of the capsule may be cut off by a knife "fastened by a pin to a stand resting on the framing" and counterpoised by a weight, or after it is taken off the mandrel.

In a modification of the foregoing the machine has only one mandrel; the metal is pressed over the mandrel by a tool which is held by the workman and rests on a bar; the bar is perforated with holes, in one of which a pin is placed to act as a fulcrum for the tool.

[Printed, &c. Drawing.]

A.D. 1854, May 30.—N° 1192. (\* \*)

MORDAN, FRANCIS.—(*A communication.*)—(*Provisional protection only.*)—"An improved inkstand." The improvements consist, "firstly, in establishing by means of a cock a communication at will between the interior of the inkstand and the atmosphere through a small channel which crosses the tube to which is adapted the key of the cock; secondly, in the adaptation to the cock of a fixed or moveable air pump, either sucking or forcing" and constructed of a ball of caoutchouc perforated at top and bottom. A drawing of the inkstand (but without description) accompanies the Provisional Specification. The inkstand is composed of a covered reservoir with a dipping cup attached to one side, a vertically bored standard provided with a stop cock, and a hollow ball of caoutchouc or other elastic material, cemented or otherwise secured to the top of the standard, and so placed that the hole in its bottom, the bore of the standard, and a hole in the top of the cover correspond. There is another hole in the cover for filling, &c.

[Printed, &c. Drawing.]

A.D. 1854, June 19.—N° 1328.

FELL, THOMAS MARA, and COOKE, WILLIAM.—(*Provisional protection only.*)—"Improvements in bottles and bottle stoppers, and in stopping and applying the same." The first improve-

ment consists in manufacturing stoppers, "through which the contents of a bottle may be poured without removing the same;" the stopper is made "hollow through its entire length, and fitted with a plug transversely;" the plug is moved by a lever or spring.

The second consists in manufacturing bottles having the above arrangements "combined with and being portion of the bottle."

The third consists in manufacturing bottles "to receive the cork transversely or across the neck."

[Printed, 4d. No Drawings.]

A.D. 1854, June 28.—N° 1423.

COCKSHUTT, EDMUND. — "Improvements in bungs or adjustable stopper apparatus for casks and other vessels." A "metallic nut socket" is inserted into a hole made in the body of the cask; it is set tightly in the hole and held by screws or pins passed through an external flange into the wood. The socket is tapped internally, and has fitted into it a metal stopper which is tapped externally. The stopper "has on its outer side a rectangular recess" for the reception of a turn-key, and an external flange (conical on its under side) "which fits into a corresponding seat in the socket, with the top of which it is flush when screwed in."

"The socket and stopper may be of porcelain or other material."

[Printed, 6d. Drawing.]

A.D. 1854, July 1.—N° 1445.

JOHNSON, JOHN HENRY. — (*A communication from Hubert Bordet.*) — (*Provisional protection only.*) — "Improvements in stoppers for bottles and other vessels, and in apparatus connected therewith." Some of these stoppers are made of gutta percha alone or incorporated with cork or wood powder. When in the mould, and before cooling, a hollow metal screw is let into the top, so that the stopper may be drawn out of the bottle by the insertion of a corresponding screw. Or a groove or projecting ring may be formed round the edge of the stopper, or a horizontal hole or recess may be made in each side, to admit the claws of a suitably formed instrument. The stopper may however be made plain and solid or hollow. Elasticity is

increased by adding caoutchouc to the gutta percha; hardness by mixing shell-lac therewith.

Others are pierced longitudinally nearly all through, thereby increasing their elasticity; others are covered with cork or caoutchouc.

Large stoppers or bungs are made of wood or other substance and covered with gutta percha, or caoutchouc, or both combined. Ordinary corks may be thus coated, or "a capsule of gutta percha fitted thereto in conjunction with metallic tops."

In one form of bung "it is proposed to hollow the under side slightly and form a small aperture through the top of the bung, which aperture is filled with a smaller stopper when used as an ordinary bung;" but if the vessel contains liquor in the act of fermentation, a "syphon-shaped pipe or passage is fitted on to or formed in the interior of the bung," and liquid is poured into the pipe, forming "an effectual air-tight hydraulic stopper."

Other stoppers are made with "an expanding bottom," which opens out when in the neck of the bottle.

[Printed, 4d. No Drawings.]

A.D. 1854, July 3.—N<sup>o</sup> 1450.

FONTAINEMOREAU, PETER ARMAND, LE COMTE DE.—(*A communication.*)—"Improvements in stopping bottles and in drawing off aerated or other liquids contained therein." The neck of the bottle is made with "two projecting fillets" or "parallel rings." In the space between the fillets a metal ring with a screw thread on it is secured in any convenient manner; the ring is cast in one piece, and then cut into two pieces or cut only in one place. A screw cap is screwed on to the ring. In the head of the cap is a cavity wherein is placed a washer of cork, gutta percha, or other elastic substance. The cap may be made in one piece or in two parts, the threaded portion and the top "which goes inside" the other part; the top may be made with a square head for a key, or the threaded portion may be provided with a milled rim, to facilitate the screwing on.

For drawing off liquids the top of the cap is pierced with a screwed hole for the reception of the screw of a syphon; or the cap "may form part of the syphon." There is a cavity above the screw thread of the syphon in "the concealed part of the

"base" for a washer. The syphon is made with a button "which is placed opposite to the emptying tube," so that the button and tube "form a handle either for shutting the vessel or for carrying it."

Modifications are described of the foregoing arrangements.

The Specification contains a description of "a portable apparatus for making artificial seltzer water."

[Printed, 1s. Drawings.]

A.D. 1854, July 4.—N° 1458.

STOCKER, ALEXANDER SOUTHWOOD.—"Improvements appertaining to match boxes, and in the fitting, stoppering, and covering of tubes and other vessels of glass, porcelain, and other materials." The boxes are cylindrical tubes of glass or such like material "with peculiarly manufactured metal tops and bottoms."

The upper end of the tube is by preference "blown downward and thinner at that part;" the lower end "should have a shoulder." The tops and bottoms are made from discs of ductile metal "by a process of gradually turning up the edges and reducing the diameter" by drawing or pressing through dies, and by then putting them into moulds known as "three-part" moulds "suitably engraved, embossed, or enriched." The cap is filled "with a soft and fusible metal" which expands on receiving a blow or pressure from the punch "and forces the external metal of the cap or other object into the crevices or under cuttings of the mould." The fusible metal is removed by heat, and the outer surface of the cap is lackered or otherwise coated.

For giving "an enlarged or curved top or dome" to the cap "a cupped bolster and a plug of vulcanized india-rubber" are used; the rubber "being driven into the head of the cap causes it to expand and fill up a suitable enlargement in the die."

The base piece is cemented or otherwise fastened to the tube; the cap for the top is lined all through with cork or other elastic material.

The caps above described are applicable also to bottles, jars, &c. When intended specially for match boxes a small opening is made in the top of the cap for the insertion of one end of the match when lighted; and inside the cap there is a disc of thin

metal, card, or other material, above the side lining, "as a false top or cover."

[Printed, 10d. Drawing.]

A.D. 1854, July 29.—N° 1673.

BURKE, EDMUND.—"Improvements in instruments for with-drawing corks and in uncorking bottles." The first part of this invention "consists in the peculiar combination of the spiral screw which is inserted into the cork and a lever of the first order by which the cork is withdrawn."

A lower lever carries at one end a socket (which rests on the mouth of the bottle neck) and on its under side a brush. An upper lever, pin-jointed to the lower one, has at one end "an elongated and well-rounded opening." The worm formed with a T head-piece works through the opening.

Modification:—The socket is lined with vulcanized india-rubber or other suitable substance "to form a cushion upon the mouth of the bottle." The upper lever is connected with the lower one "by a double pin or flexible joint with a middle link;" this joint enables the operator "to draw the cork out of the bottle perpendicularly."

The second part "relates to instruments for cutting the wires or other bindings, and also drawing the corks of champagne and other similar bottles." The socket of the under lever is made in two halves hinged together and held close by a thumb-screw or its equivalent. Upon the upper edge of the parts "thin steel plates with a bevelled cutting edge are screwed, so as when closed together to cut the bindings around the cork." The upper lever carries three or four claws whose points are "inserted under the shoulder of the cork," and pressure being applied to its outer end, "the cork is readily drawn." The patentee describes arrangements "for working the half jaw of socket piece for cutting."

One figure in the sheet of drawings is "a view of a pair of cutting pliers of a construction suitable for cutting the bindings of corks."

[Printed, 10d. Drawing.]

A.D. 1854, August 5.—N° 1719. (\* \*)

STANSBURY, CHARLES FREDERICK.—(*A communication from Robert Arthur.*)—"Improved air-tight vessels." The invention

is applicable to jars, pots, cans, bottles, colour plates, stacks or nests of colour saucers, inkstands, and other vessels. An annular groove or gutter is formed at or near the top, mouth, or neck of the vessel for the reception of the cover. The groove is partially or wholly filled with a "suitable permanent fluid when the vessel" has to be frequently opened, or with a fusible composition or "substance, when the object is to keep the vessel permanently "air-tight or hermetically sealed." The fluids mentioned are mercury, glycerine, honey, treacle, and water, but others may be used. The fusible substance or cement is a composition of gutta percha and resin, "or a fusible alloy, melting at or near the temperature of boiling water." If the vessels "are not intended for transportation," the proportions of the composition are an ounce and a half of gutta percha to a pound of resin; if intended for transportation, three ounces of gutta percha to a pound of resin. The gutta percha is added while the resin is in a melted state, and the heat is continued until the gutta percha is dissolved. "When the vessel is to be used, it is only requisite to heat its contents to the proper temperature, warm the cover, and press it into place, retaining it there by means of a weight until the cement or alloy becomes hard by cooling."

[Printed, &c. Drawing.]

A.D. 1854, August 18.—N<sup>o</sup> 1811.

CONEY, JOHN. — "An improved construction of corkscrew." The stem is hollow, "formed into a quick screw;" it works through a tapped neck on the upper cross-bar of the frame. The worm and the stem are "connected together loosely by a pin" which projects inwards from the stem into a recess in the worm; this connection allows the stem to rotate without turning the worm. The lower end of the stem is notched to admit projections formed on the upper portion of the worm; by this means the stem "when running down will drive round" the worm and cause it to enter the cork. "When the rotation of the screw stem is reversed," the worm will remain in the cork, but will rise and bring the cork out with it. The upper portion of the worm is secured to a cross-head which slides up and down in guides formed by the side rods of the frame; and riveted to the lower ends of the rods is a conical collar "which fits on to the neck of the bottle and forms the abutment for the corkscrew frame."

[Printed, &c. Drawing.]



A.D. 1854, August 19.—N° 1823.

BAUCKHAM, HENRY, and GLOVER, HOWARD.—(*Complete Specification but no Letters Patent.*)—"Improvements in the construction of an apparatus or instrument for securing or fastening corks or stoppers into bottles and other vessels used to contain effervescing or other liquors, or wet or dry ingredients, and for other similar purposes." A metallic collar or ring is fitted round the neck of the bottle; the ends of a band (of similar or other material) are riveted or hinged to opposite sides of the collar or ring, "so as to admit of its swinging backwards and forwards over the top of the cork."

[Printed, 4d. No Drawings.]

A.D. 1854, August 30.—N° 1900.

SEITHEN, JOHN. — (*Provisional protection only.*)—"Improvements in apparatus for cutting squares of cork." A knife, governed in its movement by a guide, is attached to one end of a lever which is jointed to one side of a table. The knife "moves at an angle to the edge of the table so as to make an angular cut in its downward movement." The pieces of cork, being placed on the table, are conducted by hand under the edge of the knife, "the end of the cork being placed in contact with an adjustable stop fixed to the table, so as to determine the length of cork to be cut."

[Printed, 4d. No Drawings.]

A.D. 1854, September 1.—N° 1914.

DANKS, JAMES.—"An improvement or improvements in ink-stands, which improvement or improvements may also be applied to the stoppers of bottles, the packing of pistons, and other like purposes." The dipping cup is removable; the pipe-portion is formed with a groove round it, and a ring of vulcanized rubber or other elastic substance is placed in the groove; the ring serves as a packing between the pipe and the neck of the reservoir.

In like manner stoppers for bottles are made with one or more grooves, into which are put one or more rings of vulcanized rubber.

[Printed, 8d. Woodcut and Drawing.]

A.D. 1854, September 23.—N° 2055. (\* \*)

PINKNEY, ROBERT.—“Improvements in stoppers, corks, or “ valvular apparatus for bottles or receptacles for liquids, and in “ the machinery or apparatus employed for making the same.” The invention is described as applied to an ink bottle; the stopper, of glass, stoneware, metal, or other material, is partly tubular, being bored up to within a short distance from the handle portion. In the tubular part are two lateral perforations, the front one larger than the back one, and by preference diametrically opposite to each other. In the neck of the bottle are two lateral openings corresponding with the perforations in the stopper; the opening at the back of the neck is strengthened by a lip. In bottles fitted with a spout there is inserted “an inner stopper collar piece,” which is perforated longitudinally to receive the shank of the stopper and transversely to correspond to the perforations in the tubular portion. When all the holes correspond, air is admitted through the back, and the fluid can be poured out at the front. If preferred, the tube of the shank can be made “with two “ divisions.”

These stoppers are cast in “the usual mould formed in two “ parts.” On the interior of each part is a “circular or other “ shaped” projection corresponding with one of the lateral perforations. A circular plunger for forming the hollow of the stopper “just touches the ends of the projections in its descent “ into the mould,” thereby “clearing away the material between “ the sides of the plunger and the ends of the projections,” and leaving a perfectly formed aperture in each “side of the “ stopper.” If the hollow in the tube is to have two divisions, the plunger must be shaped accordingly.

[Printed, *ed.* Drawing.]

A.D. 1854, October 14.—N° 2201.

PINKNEY, ROBERT. — “Improvements in bottles, jars, and “ other like vessels, and in the method of stoppering them.” The first described method of stoppering “may be considered as “ a modification of the ordinary bayonet fastening.” The upper part of the bottle neck is made with “a small circular projection” on opposite sides, and with a rim below the projections. A metal cap “has on the lower edge of its open end a vertical cut” extending “about the half of its height,” and branching off “at an “ angle of about ten degrees with the cut;” it has a similar cut

on the opposite side with "the branch passage in the opposite direction." In the top of the cap is a disc of some elastic material, which when the cap is put on presses on the mouth of the bottle.

Modification :—The projection "is made to extend to the top of the bottle." The cap is "perfectly plain on the exterior," and "on the inside periphery are soldered two pieces of metal," as well as "a vertical stop" to prevent the cap from turning too far.

Another method :—The cap is made with two projections "indented from the outside." Round the bottle neck is "a projecting external ring," having an opening on opposite sides and an "inclined under surface." The cap contains as before an elastic disc, and it is provided with a vertical stop to prevent it from turning too far. The projections "may be soldered on the inside of the cap, so as to leave the exterior perfectly plain."

[Printed, 8d. Drawing.]

A.D. 1854, November 27.—N° 2497.

FONTAINEMOREAU, PETER ARMAND, LE COMTE DE.—(*A communication.*)—"Improvements in the construction of ink-stands."—In this inkstand a stopcock acts as a stopper. The inkstand is composed of a covered reservoir with a dipping cup on one side and a standard on the cover. The standard is either bored vertically and communicating with the dipping cup, or it contains a vulcanized india-rubber tube secured at one end to a pipe from the cup and at the other to an india-rubber ball which is perforated at top and bottom. The ball is cemented or otherwise fixed to the top of the standard. The stopcock passes through the tube and the standard. There is an aperture in the cover for filling the reservoir.

Action :—The aperture for filling is closed air-tight; the stopcock is opened; the ball is pressed downwards, care being taken to close the hole in the top; the compressed air forces ink from the reservoir into the cup, and the cock is then shut. On re-opening the cock the air escapes through the ball and the ink returns into the reservoir.

[Printed, 8d. Drawings.]

A.D. 1854, November 30.—N° 2517.

QUIQUANDON, JEAN BAPTISTE ANDRÉ.—(*Provisional protection only.*)—"Improvements in manufacturing corks, and in

"the mode of employing their residues or wastes." The pieces of cork are "roughly cut to a prismatic form," and mounted between chucks. "Several corks are thus arranged in the form of a lantern between two plates or frames, which are united together and capable of revolving." The lantern is turned round so as to bring two of the corks to the lower part, "where their chucks are connected to two spindles which carry two pinions driven by one wheel." The two corks revolve, and the lantern is kept stationary by a catch. Under the corks is a spindle, "which is either parallel to that of the lantern or inclined to it," and on the spindle is "a circular rasp or cutter" which comes into contact with the two corks, and "reduces them to the required cylindrical or conical form." This spindle has a screw cut upon one portion of it, "which works through a nut composed of two pieces or jaws," so that as it revolves, "it advances endways and causes the cutter to travel along the cork." When the spindle has travelled the required distance, a stop "releases a catch," allows the jaws of the nut to open, and a spring or weight draws back the spindle. The catch of the lantern is then withdrawn; the spindles are disengaged from the chucks; and the lantern is turned round so as to bring two other pieces into the position to be operated upon. The chucks at one end of the corks are provided with springs to press them against the corks, and to allow of the easy insertion and removal of the corks.

The waste is obtained "in the state of fine powder," which may be used as a stuffing, or be mixed with caoutchouc, resin, papier maché, or other matters, and made into a great variety of articles.

[Printed, 4d. No Drawings.]

A.D. 1854, December 6.—N° 2562.

GEDGE, JOHN.—(*A communication from Auguste Rigolet.*)—(*Provisional protection only.*)—"Improvements in closing, stopping, or securing the necks of bottles and other similar vessels." The inventor secures bottles and acts upon the contents thereof "in the manner of a syphon." He puts into a metal tube (which he calls a plunger) "a pedal which acts therein and projects at one side of the neck of the bottle." He places in this tube another "having a screw at each end (male and female);" on the upper end he fixes a nut, and on the lower "a capsule with

“ exterior ring snipped in four or more sections and covered with  
“ india-rubber, into which the plunger tube passes.” The screw  
“ draws up the capsule, which being larger at its base spreads  
“ out the sections,” and thus “ forms a perfect joint capable of  
“ resisting any pressure.”

He proposes to use a modification of the above without the plunger tube.

[Printed, 4d. No Drawings.]

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## 1855.

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A.D. 1855, January 12.—N<sup>o</sup> 89.

SEITHEN, ANTON, and LICHTENSTEIN, JOSEPH H.—  
(*Provisional protection only.*)—“ Improvements in machinery or  
“ apparatus for cutting and shaping cork.” Three machines are  
employed; in the first, pieces of cork are cut to the required  
length; in the second, the lengths are cut into shape; and in  
the third, the flat ends are ground off.

1. A circular knife is fixed at each end of a horizontal spindle;  
the pieces are pressed against the knives by hand or by means of  
a slide.

2. An upright shaft, resting in a socket at foot and in a bearing  
above, has fixed on it “ arms with frames attached at the ends;”  
the frames carry knives “ of the shape of a segment of a circle.”  
On a circular table are placed adjustable bearings which carry  
spindles “ having discs at the ends facing each other armed with  
“ points;” the lengths “ are placed and held tight ” between the  
discs. The lengths are caused “ to revolve by suitable machinery.”  
The distance of the lengths from the table is so adjusted “ that  
“ when the cork is finished, the under part of the knife, which is  
“ flat, shall be on a level with the top of the cork.” The spindles  
“ make one complete revolution whilst the knife performs its cut,”  
and by adjusting them accordingly, “ various sizes of stoppers can  
“ be cut on the same machine during one revolution of the arm.”  
The knives “ are at each revolution made to pass between a pair  
“ of small revolving grindstones,” which are mounted in bearings  
on the table. The machine may be modified to admit of the use  
of knives “ in the form of cylindrical segments.”

3. A horizontal grindstone "composed of segments bound together by iron bands or otherwise," revolves on an axle. The ends of the corks are pressed very slightly against the stone.

The circular knives "are also applicable to cutting cork veneers."

[Printed, 4d. No Drawings.]

A.D. 1855, February 19.—N° 365.

BROOMAN, RICHARD ARCHIBALD.—(*A communication.*)—"Improvements in the manufacture of capsules for stopping or covering bottles, jars, and other similar vessels, and in the machinery employed therein."

1. The patentee adopts "a pressing plate" to capsule-making machines:—"It presses on the edge of the blank and keeps it steady" while the punch is stamping the blank into shape.

2. He employs "a compound tubular stamp or punch together with the pressing plate:—"The tubes are one within another, and each is actuated by a separate excentric.

3. He divides "the ordinary horizontal machine" into two machines by placing a compound tubular punch "at the right and left ends of the machine." The machines are united by "toothed ratchet clutches or connecting gear," and can be separated by "a double or bent rod."

4. He applies polish and colour to the metal "before the capsules are stamped into shape."

5. He makes two capsules by the same punch and at the same stroke:—"He uses two tin blanks," and detaches them when the capsules are completed.

6. He manufactures capsules "lined on the inside or coated on the outside," or both lined and coated, by putting a soft metal blank upon or under a tin blank or a tin blank between two lead blanks.

7. He arranges "four machines," so that they are "actuated in pairs by the same motive machinery." One figure in the drawings "shews the excentric for imparting the right and left hand motion;" it is so arranged as to allow one of the machines to be stopped while the other is kept at work. Another figure "represents the excentric for working the guide carriers." He explains his method of putting one machine of each pair out of gear, and of stopping any one of the four machines "without stopping or impeding the other three."

8. He divides a single machine into two parts, "one working in a right hand and the other in a left hand direction," by cutting the guide carrier into two parts and by adding to what he calls the right-hand machine two inclined planes similar to the two "on the left-hand side of the machine, whereby the guide carrier is raised or lowered." He describes the alterations required for working the two "simultaneously as a single machine."

9. He explains a method which he adopts (but he does not restrict himself thereto) "for steadying the edges of the capsule while being stamped into shape."

[Printed, 10d. Drawing.]

A.D. 1855, February 28.—N° 443.

WILSON, FISCHER ALEXANDER.—"Improvements in closing and unclosing bottles and other vessels used for containing liquids, also in the modes of inserting, securing, and liberating liquids therein and therefrom." This invention "comprises a series of tubes, stoppers, and lids."

1. "A single hollow plug or stopper :"—It is fitted with one or more valves which can be opened and closed by "one or more springs, screws, levers, or slides." The valves can be opened or closed simultaneously or separately, and the stopper can be "fastened to the vessel, but so as to be removed when necessary or to form an "integral part" of the vessel.

2. "A double-tubed connecting stopper :"—It is opened by turning or lowering or raising the inner tube until lateral apertures in the tubes coincide; it may be closed by means of a plug. The outer tube is provided with a cover screwed, hinged, or fastened with a spring thereto.

3. "A covering plate with a lock valve :"—It is formed with an aperture which is closed by a slide valve and is locked by a screw lock. Or it may be opened and closed by means of a knob actuating an under lid which is locked by a screw lock. When the plates "are intended to be loose and capable of being fitted to vessels of different sizes," they are made "with an expanding and contracting under-flange" which is actuated by turning a "moveable centre."

4. A "pocket bottle or canteen :"—The bottle may be divided into compartments for containing different liquids; these "are to be inserted through the valves and tubes, in the plates of which

" the top and bottom or two ends are formed, and to which the  
" valved stopper, cups, and mouth-pieces are to be attached."

5. " Cork-cutting tubes, heads, and valves :"—These tubes are used for cutting a hole through the cork of a bottle "for inserting any of the foregoing tubes, stoppers, valves, or parts thereof, or to be used with the head valve, &c. in lieu thereof." They consist of inner and outer steel tubes, slightly conical; the outer one is made "with a spiral cutting flange" on the outside. The head which fits on to the top of these tubes is "similar to the head of a corkscrew," it is hollow, "open at one or both ends, and fitted with a valve or valves."

6. "A syphon pipe :"—A small air pipe is formed therein. "This syphon may be used for liberating liquors through corked vessels."

All or nearly all the foregoing admit of modifications.

[Printed, 1s. 6d. Drawings.]

A.D. 1855, March 30.—N° 714.

NEALE, EDWARD VANSITTART, and DAWSON, THOMAS.—"Improvements in handles and parts of handles for umbrellas, walking sticks, knives, and for other like articles; and for articles of furniture in stoppers, finger-plates, medallions, jewellery, furniture, and other decorative articles." The stoppers, as well as the other articles named, are made of glass "blown or cast into suitable shapes." The inner or under surface (according to the article) is decorated with, "any pattern, figure, or device required." The patentees "consolidate the glass or fill it up or in" with fine dry sand, or cement, "or other substance capable of giving strength and support thereto." They describe several modifications of their processes.

[Printed, 4d. No Drawings.]

A.D. 1855, April 2.—N° 736.

LUND, WILLIAM, and HIPKINS, WILLIAM EDWARD.—"Improvements in the manufacture of corkscrews." The patentees describe the construction of three sorts of corkscrew.

1. Corkscrews in which the worm (and with it the cork) "is raised by means of a rack and pinion :"—The rack on the stem which works on the pinion "is continued round the entire circumference" instead of only traversing a narrow portion of it."



The thread of the worm "may therefore be more open or wider "apart than in ordinary corkscrews of this description."

2. "Lever or nipper corkscrews:—"The corkscrew is separate from the levers; there is a shoulder at the head of the worm, and the handle or T head is pierced with a hole. The upper lever is formed with a hook at one end; the pin which connects it to the lower lever works in a slot so as to make a "shifting joint." To draw the cork the hook is inserted either into the hole or under the shoulder, and the handles of the levers are pressed together.

3. "Pocket corkscrews:—"The worm is separate from the case and is held in the required position by a "notch" and a "hollow "or cup" in which "its stem is fitted" and secured there "by "the screw which unites the top and the bottom of the case."

[Printed, 10d. Drawings.]

A.D. 1855, April 4.—N° 754.

HILLS, ROBERT, MILES, THOMAS, and MONUMENT, HENRY. — (*Provisional' protection only.*) — "Improvements in "bottles, jars, and other similar vessels, to facilitate the corking "or stopping of them." The neck of the bottle, &c. is made "with an internal screw moulded or formed in the material." An ordinary cork is screwed into the neck and becomes "imbedded "in the angular recesses of the screw." The inventors "reserve "a right to vary the details of this invention."

[Printed, 4d. No Drawings.]

A.D. 1855, April 17.—N° 844.

CRAPELET, CHARLES.—"Improvements in the construction "of tompons for cannon and other fire-arms, which improve- "ments are applicable to stopping bottles and other vessels." The patentee introduces into the orifice to be closed "a plug of "vulcanized india-rubber or other suitable elastic substance "in such a manner that the said plug may after insertion be "compressed longitudinally."

The parts are (1) a metal screw with a conical or inclined head, (2) a ring of india-rubber immediately below the head, (3) a piece of wood or metal (below the ring) formed with a shoulder and an incline, (4) a nut of wood or other material below the incline.

The nut is unscrewed so that the ring may take its natural form and pass freely down the orifice until the shoulder of the inclined

piece comes into contact with the top of the orifice; the nut is then turned, and the ring being compressed against the sides of the orifice "makes a perfectly tight joint." In this arrangement it is to be observed that the nut is uppermost and the screw-head at the bottom.

Several modifications are described:—An iron pin may connect two inclines, and the ring may be compressed by turning one incline "a quarter round." The pressure on the ring may be given by a coiled spring. A metal plate may be substituted for the inclined piece in the first described arrangement. Two conical pieces may be employed, the hollow of the lower one fitting on to the upper one; the ring is placed on the smaller portion of the upper cone and is forced up and expanded by a screw and nut.

[Printed, 6d. Drawing.]

A.D. 1855, May 21.—N<sup>o</sup> 1143.

SHAW, THOMAS GEORGE.—(*Provisional protection only.*)—"An improved conductor to be used in the decantation of wine "or other liquids." The object of this invention is to prevent "the gurgling" which takes place in decanting wine, &c.

The inventor inserts into the neck of the bottle after the cork is drawn "a tubular instrument like a hollow cork;" it is provided with "a small inner orifice for the insertion of a small air tube." The outer opening of the air tube is to be closed with the finger whilst passing it through the conductor into the bottle. When the air tube is so far inserted that its inner orifice "has been "passed up into the vacuum" between the neck-top and the liquid, and the finger has been removed, "the outer air rushes "in, presses upon the liquid, and causes it to flow perfectly "smoothly."

[Printed, 4d. No Drawings.]

A.D. 1855, May 26.—N<sup>o</sup> 1204. (\* \*)

METHVIN, DAVID.—(*Provisional protection only.*)—"Improvements in the manufacture of stoppers for bottles and other "vessels." This consists in "forming a stopper for a bottle or other "vessel of a hollow or tubular form of vulcanized india rubber, "cork, or other suitable material." "The stopper has a cone to "enter at the end, which passes into the neck or opening of the "bottle or vessel. The cone is acted on by a screw and nut or

“ other instrument in such manner as to move the smaller end thereof into the end of the hollow or tubular stopper, which will cause the stopper to be enlarged in diameter.”

[Printed, 4d. No Drawings.]

A.D. 1855, May 29.—N° 1230.

ROGERS, GEORGE.—(*A communication.*)—“ Improvements in “ apparatus for retaining and drawing off aerated liquors.” The object of this invention is to allow the liquor to flow out of the bottle “ in a compact unbroken stream.”

“ At the lower part of the body ” of the stopper is a circular cavity for the reception of an elastic ring, which forms the seat of a valve. The ring is pressed into its place and confined by a socket cast upon or cemented to a glass tube which descends nearly to the bottom of the bottle. The socket has a conical flange which rests upon an elastic ring on the top of the bottle neck. The valve is a “ circular projection at the end of a “ cylindrical piece of metal ” from which ascends a stem carrying a knob. The knob “ rests upon the top of a spiral spring contained in a cylindrical cavity in the top ” of the stopper. The bottom of the spring rests upon an elastic collar which embraces the stem “ and serves as a stuffing box to prevent the escape of “ any liquid.” The cylindrical piece of metal “ is traversed by a “ passage having two lateral apertures.”

The stopper is thus fixed :—The bottle neck is made with a groove “ into which are inserted the two halves ” of a ring. A screwed collar has a shoulder at the lower end which bears against the ring, “ while the upper part is screwed on the body of “ the stopper.” The joint is made good “ by the interposition “ of caoutchouc or other suitable material.” There is an outlet or spout on the side of the stopper in connection (at times) with the upper lateral aperture.

The liquid is caused to flow up the glass tube, through the lower lateral aperture, “ and out at the other aperture and through “ the spout,” by pressing on the knob.

[Printed, 6d. Drawing.]

A.D. 1855, June 5.—N° 1278.

GEDGE, JOHN.—(*A communication from Constant Chevalier.*)—(*Provisional protection only.*)—“ Improvements in securing the “ contents of bottles or other similar vessels.” This invention

relates to an apparatus "for pitching, waxing, or cementing the necks of bottles and other similar vessels so as to cover the corks." The inventor employs "a conical vase," so that "the resinous matters will present only a very small surface to the action of the stove" in which the vase is placed. The stove is furnished "about the height of its door with several circular openings for facilitating draught" and at the back with a small opening (closing with a slide) to regulate the heat. The heat will be supplied from a spirit lamp with three or more burners, and the wicks will be regulated by "a simple apparatus, to consist of catch wheels mounted on a toothed rod which gears with them."

[Printed, 4d. No Drawings.]

A.D. 1855, June 15.—N° 1371. (\* \*)

MORRELL, GEORGE FREDERICK.—"An improvement in ink bottles or ink vessels." This invention has for its object "to construct ink bottles or ink vessels of such a form as to render them less liable to injury when containing ink and packed, and also more convenient for use as inkstands than ordinary ink bottles in which ink is sent from place to place and sold." The bottle, of earthenware or glass, may be of any shape, but it is desirable that the external form be such as will admit of the largest number being packed in a given space. "Each bottle is made with only one opening or internal and descending neck into it." The upper edge of this neck should be level with, or only a very little above, the upper parts of the bottle, and the upper parts may be made slightly concave. If the neck "be made to protrude to some extent outwards the bottom of the bottle may with advantage be made somewhat concave outwards, so that, in packing and piling one ink bottle on another any portion of the neck of one which protrudes, and also its cork or stopper, may (by reason of such form of the bottom) come within the concave bottom of the next bottle above." In the descending neck is a small air hole to facilitate the filling of the bottle through the neck.

[Printed, 6d. Drawing.]

A.D. 1855, July 9.—N° 1536.

SEITHEN, JOHN, and SEITHEN, ANTON BRUNO.—"Improvements in machinery for cutting and shaping cork." First,

two machines are described for cutting cork into strips, one with two circular knives, the other with a reciprocating knife.

In the one a knife is mounted on each end of an axle, which carries also a fast and a loose pulley. The cork is placed on brackets of tables (one on each side of the machine) and is held there, while the cutting takes place, by frames which slide up and down in guides. Pins project from the frames into slots cut in hand levers, which are connected to the tables at one end and are kept in position at the other end by guides. The levers are raised by hand "for a fresh feed in of cork;" they are held pressed down "while fresh cuts are made," during which time the tables are pushed forward towards the knives. The under sides of the tables are V-shaped and move in grooved rollers. Gauges "regulate the feed in and consequently the width of the strips cut." There are sharpening rollers suitably geared to the main axle, one on each side of each knife.

In the other the cork "is fed in at the right-hand side" of the machine on to a table "inclined in an opposite direction" to that in which the knife approaches it. The knife is suspended by rods from a beam; it may be swung to and fro by the handle of a link to which the rods are pinjointed; it is kept "from swerving laterally" by guide bars. A lever connected to a treadle is moved forward and presses upon the cork during the cutting.

2. A machine for cutting the strips into squares:—A circular knife is mounted on an axle which carries also a pulley. The square is placed in a rest which is provided with a dovetail to allow of its moving towards the cutter, "parallel with it a short distance." The rest is pushed forward by pressing against the back part, "which part is also provided with a guard." The dimensions of the squares are regulated by "an adjustable stop or gauge piece."

Another arrangement:—The knife is secured to a bent lever which is pinjointed to the framing; it works through a slot cut in the table. The lever is worked by means of a handle or by means of a treadle and a counterbalance weight.

3. A machine for shaping the squares:—Two knives, "which are segments of a circle," are fixed, one on each arm of a vertical shaft; they are fixed "in a vertical position having their edges downwards, although such need not be the case." The squares are placed between holders, each provided with points "to insure the cork revolving when the holders" revolve. This revolution

is effected by cams (affixed to the arms) which, as soon as the knives have entered the cork, press down levers carrying racks that are in gear with pinions on the axles of the holders. The squares become cylinders or cones accordingly as the holders are set by a screw, "the parts returning into their former position after " the passage of the knives by means of springs." The corks are removed from their holders by means of treadles which are connected to bent levers, thereby causing one set of holders " to slide in their bearings " away from the opposite set. The cutting edges in their passage " pass into a suitably formed box " containing grease," and rotatory sharpening stones geared to the main shaft prevent them " from becoming dull."

Another arrangement is described for given motion to the holders.

For cutting veneers, the knives are (by preference) mounted " with their edges in a horizontal position," and the cork " is " glued or otherwise attached " to the tables. Beneath each table is a nut extending downwards through which a screw passes. On the screw is a wheel; a rack attached to the under side of the arm gives " an amount of rotatory motion thereto " and carries forward the table and cork towards the edge of the knife. " The " veneer as it is cut is caused to peel off by means of a slight " cord and weight " passed over a pulley which is carried by the table. After a veneer is cut, the table is brought back by means of a winch handle; it is raised " to the extent of the thickness " of the veneer required " by pulling round a chain, " which gives " a like amount of motion " to vertical screws. The sharpening stones are mounted one above and one below each knife.

[Printed, 2s. Drawings.]

A.D. 1855, July 16.—N<sup>o</sup> 1590.

TAYLER, WILLIAM HENRY.—(*A communication.*)—"Improve-  
ments in hermetically sealing preserve canisters and other  
" vessels by means of a new arranged screw cap and fittings."  
The neck of the vessel has a screw-thread on its outside and  
a trough round its bottom. The cap has on its inside a corre-  
sponding screw-thread, and on its outside two studs which fit  
into the holes of a key. The top of the cap is lined with a  
" gasket washer " of vulcanized caoutchouc, and when the vessel  
is intended for " a preserve canister," there is in the top of the

cap an opening (to let out steam) which is closed by a screw-cap and washer. When the cap is screwed on to the neck, "bees-wax" or other cement" is poured into the trough "so as to rise above" and effectually close over the joint between the neck and lower "edge" of the cap.

[Printed, &c. Drawing.]

A.D. 1855, July 25.—N<sup>o</sup> 1690. (\* \*)

SCULLY, VINCENT, and HEYWOOD, BENNETT JOHNS.—

"Improvements in vessels for containing and preserving fluids." This invention relates, 1, to the construction of vessels "which permit of the withdrawal of liquids therefrom without admitting air into contact with the remaining liquid;" and 2, to improved means of constructing inkstands, whereby "the undue evaporation of the ink" is prevented.

1. An ornamental vase is fitted with a removable cover; within the vase is a cylindrical case wherein works a piston "provided with a central knob to raise it and a lever valve to admit air below the piston" when required. The case is permanently secured to the vase; or the latter may be dispensed with, and the case may be mounted on a foot or pedestal; in communication with the case is a tap. The piston, being properly packed, will prevent the air from passing down to the liquid; and as the liquid is withdrawn, the pressure of the air will force the piston down; the piston might be weighted to "insure its descent immediately on the turning of the tap." In some cases it is proposed "to increase the capacity of a vessel of a given diameter" by constructing it "on the telescopic principle, making the joints air-tight."

2. Three arrangements of inkstands are described; in the first the ink chamber has "a flexible bottom" which "permits of the capacity of the chamber being increased or decreased;" it is supported on "a loose stand," the face of which is concave. In the upper part of the chamber is a dipping cup; and a tube forming a continuation of the cup, reaches nearly to the bottom of the chamber. The vessel is filled through the cup, "the air in the vessel being allowed to escape by a vent in the upper part;" the vent is afterwards to be closed air tight. The second, "constructed on the well-known fountain principle," is a cylindrical vessel fitted with a piston, the rod of which is hollow, "attached to the piston by a swivel joint," and carrying at its

upper end a dipping cup; on the rod is a screw thread "to work in a thread tapped in the centre of the cover." The third is composed of "two concentric cylinders" mounted on a pillar and stand; the inner one, by preference of glass, is packed with a ring of cork or other suitable substance; the outer one, preferably of metal, has an aperture corresponding to that of the inner one. When the inkstand is in use, the apertures coincide; when not in use, the inner cylinder is turned on its axis and the aperture is closed.

[Printed, 10*d*. Drawing.]

A.D. 1855, August 1.—N° 1745.

BUFNOIR, GEORGES.—(*Provisional protection only.*)—"Improvements in stopping bottles and other vessels." The inventor employs earthenware, glass, wood, or other stoppers in conjunction with india-rubber washers and wire or metallic slips. The body part or plug of the stopper enters the bottle neck; the head or knob has "the same diameter as the bottle neck outside;" and the washer "is pressed between the shoulder of the stopper and the top of the neck." A wire ring with eyelets on opposite sides is fixed "under the ring or swollen part" of the neck, and a wire or slip which is passed over the stopper head is hooked or otherwise secured into the eyelets. Grooves on the stopper heads confine the wires in their position. The india-rubber may be made "to wrap up the plug part of the stopper."

[Printed, 4*d*. No Drawings.]

A.D. 1855, August 25.—N° 1923.

AVERY, JOHN.—(*A communication.*)—"New and useful apparatus for exhausting and closing vessels." This apparatus is intended principally "for the exhaustion of vessels in which vegetable or animal substances are to be preserved." The principal parts are "an exhausting pump without valves and certain devices which serve to hold the plug or stopper during the process of exhaustion in the passage through which the communication is effected between the pump and the vessel, and to insert the plug in the mouth of the vessel after the air has been exhausted."

The pump is supported on a stand; its sides and top "consist of a single casting of metal," its bottom of a sheet of india-



rubber or other flexible substance. The sheet is held at its middle between two plates or blocks whereby it is attached to a rod which is connected to a lever below the pump. On the top of the pump is an upright pipe whose mouth "is so formed as to receive and form a seat" for a nozzle of the vessel. The pipe is enlarged below its mouth to contain a plunger, which has two heads "fitting in the said pipe easily but sufficiently close to give steadiness to the upper part of the plunger, which is to carry the stopper to close the nozzle." The plunger is raised by a lever which works through an opening or branch in one side of the pipe; the opening is "covered closely all round the lever" by india-rubber tubing. The stopper is punched out of "raw potato or other vegetable substance," and the tubular punch with the stopper inside it is "dropped over the plunger." The heads of the plunger are pierced with holes, and the plunger when not required to be raised "is held down by a spring."

The lower lever being raised raises the flexible bottom, and thereby reduces the capacity of the chamber or pump; the plunger is drawn down, the nozzle of the vessel (which is inverted) is placed in the mouth of the tube; the lower lever is then depressed drawing down the bottom, enlarging the capacity of the chamber, and producing a vacuum in it and in the vessel. The plunger is then raised, carrying with it the punch and stopper, and when the punch comes into contact with the nozzle "the continued movement of the plunger" expels the stopper and drives it into the nozzle.

"The apparatus admits of considerable modification."

[Printed, 8d. Drawing.]

A.D. 1855, September 14.—N<sup>o</sup> 2076. (\* \*)

SCULLY, VINCENT, and HEYWOOD, BENNETT JOHNS. — (*Provisional protection only*).—"Improvements in bottles, ink-stands, and other vessels, and in caps or stoppers for closing the same." In their specification the patentees say, "The object of this invention is to facilitate the closing and opening of bottles, jars, and other vessels. To this end we so construct these vessels as to permit of the application thereto of caps or covers, which, without any extrinsic aid as bands, clips, or wires, will retain their position and permit of being readily removed when required. For covering bottles, jars, or other vessels

“ which require the removal of the cap or cover whenever access to the interior is desired, we form a shoulder on the neck of the vessel, with inclined grooves to receive pins projecting from the inner periphery of the cap or cover; or we form inclines on the under side of the shoulder for the pins to bear against as the cap is turned, and thus bind the cap tight to the neck of the bottle or jar. The shoulder must of course be grooved vertically to allow of the pins reaching the inclines on its lower edge. Or, in lieu of this arrangement, the vessel may be provided with projecting pins, and the cap with inclines; but we prefer the former plan. The insertion of some elastic material in the cap to come in contact with the lip or upper edge of the vessel will insure an air-tight closing of the vessel. For closing that class of vessels to the interior of which access is required without the removal of the cover, taking for example inkstands, we make the inkstand cylindrical, and fit into the upper end a disc pierced with an excentric hole. The cap we pierce with a hole corresponding thereto, and when the two holes are brought into coincidence a pen may be inserted as in a common inkstand. To render this vessel fluid-tight when closed, and therefore portable, we tap the upper part of the vessel and the cap with a coarse screw, or provide a means similar to that above described for securing the cap to the vessel. We also propose, by increasing the depth of the cap, to gain sufficient friction surface (with the aid of an elastic packing or not) to hold the cap securely in its place.”

[Printed, 4d. No Drawings.]

A.D. 1855, October 16.—N° 2314.

CLAEYS, THÉODORE AUGUSTIN.—(*Letters Patent void for want of final Specification.*)—"Improvements in the manufacture of corks and bungs." The strips are first divided into squares by means of "segmental excentric knives" mounted on rotating discs; they are held "upon a support against a moveable adjusting piece which regulates the size of the pieces of cork to be cut."

The squares are carried to a "rounding machine which serves to give them the required cylindrical or conical form." They are fed one by one "on to a square carrier, which is capable of rising and falling in guides" and supplies them singly to

revolving chucks armed with teeth. On the ascent of the carrier the chucks approach each other and seize the ends of the square; they then begin to revolve, and "a segmental knife, mounted upon the outside of a wheel set at an angle" to the carrier, shaves off the angles of the square. This knife is immediately followed by a second knife of a similar shape and set nearer to the square; this knife "by taking off another slice while the square is made slowly to rotate on its axis gives to the cork the requisite round form." The chucks now open, and the cork falls into a receptacle, being freed from the chucks by rods sliding to and fro inside the spindles which carry the chucks. "

The corks are taken to another machine "to have their ends trimmed;" this operation is performed by "knives of a similar shape to those of the first machine." The knives are mounted on revolving discs; and a regulator determines the quantity of cork to be removed.

[Printed, 4d. No Drawings.]

A.D. 1855, October 25.—N<sup>o</sup> 2386.

ARDOUIN, ALFRED.—"A corking and capsuling machine." A circular table, with sockets in which the bottles to be corked are placed, is made to revolve horizontally "as fast as the bottles can be put in and taken off" by means of a horizontal driving shaft mounted above it. On the shaft are two cranks; one by means of a connecting rod and pawl turns a ratchet wheel at the base of the machine. The extremity of the ratchet axle nearest the table bears a cogged wheel which turns a horizontal cogged wheel fixed upon the pedestal of the table, "thus causing the table to revolve with momentary stoppages to allow each bottle to receive a cork as it passes beneath a corking tube." The other crank "works in the horizontal slot of a piston, each revolution taking a cork from the feeding tube into the corking tube." Motion is communicated by a rigger keyed on the crank shaft and carrying a pin "for giving the proper amount of motion to the ratchet wheel." The table "will move round one-twelfth of its revolution," thereby bringing a bottle directly under the corking tube; to prevent its moving too far a pawl "is fixed on a stud in the side frame" and forced into notches in the lower edge of the table by a spring; and the pawl is released by the connecting rod pressing against one end of it. The table "is made to rise and fall to

"suit the different sized bottles." During the motion of the table a cork is placed in the corking tube by a lever, whose top end has been forced out by a plunger in its upstroke, thereby causing the lower end "(to which is attached a small wooden "plunger")" to deliver the cork from a feed pipe into the tube. When the table is stationary, the plunger descends and forces the cork through the narrow part of the tube into the bottle. The tube ascends by means of a spring; its lower end "is hollowed "out" to clip the neck of the bottle "so as to bring it central "with the plunger" and to allow the bottles in the table "to "pass under." A trough catches "any waste that may occur "from breakage in bottling."

The feeder is composed of a series of tubes fitted to a top and bottom plate, "both ends of which are open, but to the under "side of the bottom plate is attached another plate with corresponding openings to those of the tubes;" this plate is made to move "equal to half the distance the tubes are from centre "to centre;" it is moved by a handle and kept in position by a catch. The feeder moves by being connected to a screw on the crank shaft, and the connection (which is fully explained in the specification) is such that each tube is, "as it comes round for "delivery of its corks, exactly central with the feed pipe." The feed pipe may be supplied by hand.

The apparatus for capsuling is fixed to one of the side frames. A vertical rod, "which slides on a feather," is moved "by a "bevel wheel and pinion from the crank shaft." To the pinion is attached a lever which is connected to a treadle. The lower end of the rod is enlarged and grooved to fit four capsuling clips which are hung on pins in a socket. When the rod descends, it causes the clips "(to each of which a wood wheel is hung)" to press against the tin foil, "the pressure being regulated by the "foot."

[Printed, 10d. Drawing.]

A.D. 1855, November 10.—N° 2530.

SCOTT, JOSEPH.—"Improvements in corking bottles, jars, and "other receptacles." The object of this invention is to prevent the "compression of the air within a bottle" or jar during the act of corking. The patentee employs "a thin tube, tubular or "hollow instrument," which he interposes between the side of

the cork and the side of the bottle neck. When the cork is driven in, the instrument is drawn out by means of its handle; and the elasticity of the cork "will cause it to expand so as to close up the entire neck." The portion of the instrument which enters the neck may be grooved instead of tubular, and an orifice "may be made in continuation of the groove" through the handle.

[Printed, 8d. Drawing.]

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## 1856.

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A.D. 1856, January 12.—N<sup>o</sup> 89. (\* \*)

BAIN, ALEXANDER. — "Improvements in the construction of "inkstands." This improved inkstand "is a hollow cylindrical vessel, somewhat in the shape of a mortar, made of any suitable material," and mounted on "a cylindrical foot or fulcrum" on which it can turn. On the top of the vessel is an opening which serves as a dipping cup, and through which ink is poured into the vessel. The opening is furnished with a lid which is fixed to a stem moving freely on a stud on the top of the vessel; at right angles to the stem is a shorter stem fixed at one end to the stud, and having a weight at the other end. This weight is heavier than the lid, and is for the purpose of causing it to cover or uncover the opening according to the position in which the vessel is placed. "The advantage sought to be obtained by this invention is to keep the substances of which the ink is composed well mixed by agitating it every time the inkstand is taken into or put out of use."

[Printed, 8d. Drawing.]

A.D. 1856, January 16.—N<sup>o</sup> 115.

SCULLY, VINCENT, and HEYWOOD, BENNETT JOHNS.— "Improvements in the construction of inkstands, applicable in part to other vessels for the reception of fluids." The patentees describe their invention as applied to (1) inkstands, (2) syringes, (3) vent-pegs, (4) feeding bottles.

1. "A double or compound flexible valve" is fitted into an opening in the cover; it is composed of "two discs or dish-shaped pieces of vulcanized india-rubber," each pierced with an air-hole,

but that of the lower one "being made self-closing, so as when pressed upon to serve as an ingress, egress, or cut-off valve, as required."

2. Two valves of "thin vulcanized sheet rubber" slit across close the ends of a chamber "formed by a tube of vulcanized rubber" and "attached to the collars" of the instrument. "Supply and discharge pipes" are fitted to the opposite ends of the syringe.

3. The vent-peg is hollow, and the air-passage is closed by one "or more thin discs of vulcanized rubber slit and secured in position by a cap which is perforated with an air-hole. "Air will force its way through the valve and enter the cask, but immediately the equilibrium of pressure is restored, the valve will close."

4. "A hollow plug for admitting the food" is formed "after the manner of the vent-peg just described;" it is provided with an india-rubber valve, "which is capable of yielding to the pressure of the air" as the food is withdrawn from the bottle. Modification:—"The cover of the bottle is moulded in vulcanized india-rubber and sprung on to the neck." This cover "is fitted with two valves, the one opening outwards, and the other inwards."

[Printed, 8d. Drawing.]

A.D. 1856, February 20.—N<sup>o</sup> 429.

GEDGE, JOHN.—(*A communication from Bernard Auguste Serres Duvignau.*) — (*Provisional protection only.*) — "Improvements in siphons." The siphon is made "with a reservoir above and connected directly with the longer limb," the shorter limb forming its tubular connection just below the reservoir."

In use, the stopper of the reservoir should be removed, "the shorter limb being previously immersed in the liquid to be withdrawn, the cock at the lower portion of the longer limb closed, and any kind of liquid poured into the reservoir." This liquid fills the longer limb "almost to the height of the stopper;" the stopper is then replaced, the cock is turned on, and the liquid will flow. There being a column of air between the liquid used by filling the reservoir and that to be withdrawn, "after the exit of the water or other priming liquid no danger of mixing the priming liquid with that intended to be drawn off will occur."

[Printed, 4d. No Drawings.]

A.D. 1856, February 20.—N° 435. (\* \*)

CLARK, JEREMIAH, and AUSTIN, JAMES.—“Improvements  
“ in apparatus for stoppering or closing bottles, jars, and other  
“ similar vessels.” The patentees describe their invention “as  
“ applied to the neck of an ink bottle.” A closed cap of metal,  
hard rubber, or suitable material, is fixed by cement, screwing, or  
other mode, to the neck of a bottle, either outside or inside as  
may be convenient. A spout is formed on one side of the cap,  
“ and an opening is made in the top of the cap itself,” through  
which “the liquid to be poured off reaches the spout.” Both  
opening and spout are closed air and liquid tight by an india-  
rubber or other suitable packing fitted to the under side of a  
conical plug which is formed on one end of a thumb lever. This  
lever works on a fixed centre in a small support which is secured  
to the cap; it is lengthened “so as to admit of the thumb being  
“ pressed down upon the prolonged end for the purpose of  
“ raising the plug.” A metallic spring serves to bring the plug  
down again when the pressure is removed. “The spring may be  
“ made to act in such a manner as to keep the plug firm in its  
“ seat when closed, and also to keep the aperture open when the  
“ plug has been raised.” Or “the whole or a part of the top  
“ of the cap may be made to open or close on a hinge by a small  
“ thumb lever similarly acted upon by a spring, the lid being  
“ shaped so as to cover also the pouring spout;” the conical  
plug will be dispensed with, the spout “being kept tightly  
“ closed by an india-rubber or other suitable packing fitted to  
“ the face of the lid at the part where it rests upon its seat when  
“ closed.” In either arrangement the raising of the plug or lid  
may be effected by a prolongation of that part which covers the  
spout, “the thumb lever in such case being dispensed with,  
“ whilst the spring would be still retained to keep the plug or  
“ lid tightly closed.”

[Printed, &c. Drawing.]

A.D. 1856, February 21.—N° 446.

ENTHOVEN, FREDERICK.—(*A communication from C. Enthoven.*)  
—(*Provisional protection only.*)—“An improved cover for gun-  
“ powder and other canisters and vessels.” A rim grooved on  
its outer circumference is fastened to the inside of the case; it  
is formed “with a vertical flange on its inner circumference.”

A lid is fitted into the rim, "the inner circumference of the rim and the outer edge of the lid being turned true to fit each other exactly."

Hooked pins are connected to the rim, "one or more opening to the right, and the other or others to the left." Under the hooks "fit two or more arms diverging from the centre of the lid," and forming at the point where their inner ends converge, "a ring or collar screw threaded on the inside, through which passes a short screw connected at bottom to the lid, and having a thumb-piece or handle at top."

On turning the screw in one direction "the arms become engaged in the hooks;" the screw "forces down the lid tightly, and keeps the opening closed." On turning the screw in an opposite direction "the arms cease to bear against the hooks, and the lid is loosened from the rim."

Sometimes "a packing may be used between the rim and cover."

[Printed, 4d. No Drawings.]

A.D. 1856, March 26.—N° 724.

BARKER, WILLIAM ROBERT, and TOOGOOD, WILLIAM.—*(Provisional protection only.)*—"Improvements in bottles, or in stoppering bottles, jars, and other receptacles." This invention consists in making "one, two, or more apertures in the side of the neck," and in fitting therein a stopper "open or partially open at top, with lips and channels so formed, that unless they are turned to correspond with the aperture or apertures in the side of the neck, the bottle or jar is hermetically closed."

Or the neck may be made with a channel or channels extending a short distance down the neck, and the stopper to be inserted, "with a passage or passages" which are opened only when "they are turned to lead into the channels."

This invention is susceptible of several modifications.

[Printed, 4d. No Drawings.]

A.D. 1856, April 19.—N° 936.

GRIFFITHS, ROBERT.—*(Provisional protection not allowed.)*—"Improvements in the manufacture and fixing of metallic capsules, and coverings for the tops of bottles, jars, and other vessels." "A disc of metal or a manufactured capsule" is placed on the



bottle, "which is then brought against a small disc acted upon by a spring, having only a sliding motion through the centre of a larger disc or face-plate." On this plate tools are "made to slide towards the centre" by means of springs, which cause them to press closely against the sides of the bottle, so that when the plate is made to revolve or to reciprocate, the tools "will press the metal tightly around the sides of the bottle." A cutter (or more than one) then comes against the metal and cuts it off to the required length. Sometimes an embossed roller comes into contact with the capsule to ornament it.

In some cases the face-plate and tools are "put into a frame to work horizontally," and the bottle is set on a platform. The frame may be arranged to slide downwards, or the platform to slide upwards.

Sometimes the cork is cut level with the top of the bottle, and wax, resin, &c. is placed between the cork and the top of the capsule.

Sometimes the capsule is made on "a wooden or other mould of the vessel to be covered;" it is then applied to the vessel and finished off as before described.

[Printed, 4d. No Drawings.]

A.D. 1856, July 5.—N<sup>o</sup> 1583.

BLACKSTONE, LORENZO. — (*A communication.*)—"Improve-ments in the manufacture of corks and bungs." The foundation plate of the machine required for this invention is of cast iron; it carries four standards, two supporting the journals of "a rotating tubular-shaped cutter," which is mounted on a hollow axle, and two "a sliding shaft," whereby "the blank or square of cork is pushed forward to be operated upon." Between the journals is a pulley "fastened to the cutter shaft by means of a set screw." At the outer end of the sliding shaft is a handle, and at the inner end a disc "having a face on the side next the cutter at right angles to the axis." One arm of a sliding frame is secured by set screws to the sliding shaft, and the other arm to the outer end of a rod which "runs loosely into the interior of the revolving cutter."

The square is held so that one face "shall rest against the face of the disc;" the cutter is made to revolve; the sliding shaft is pushed forward, and a cylindrical piece of cork "is separated from the block and received into the cavity of the cutter." The

shaft is then drawn back; the rod "is moved with it and throws the cork out perfectly cut."

There are two hubs on the sliding shaft; one by striking one of the standards prevents the disc from coming into contact with the knife edge; the other by striking the other standard prevents the rod from passing "beyond the cutting edge of the disc." The cutter for cylindrical corks is made with a "simple circular knife edge;" a slight taper is given to the outside to ensure a cutting edge. For cutting tapering corks it is slotted or "formed of segments of a cylinder;" or it "may consist of one or more segmental pieces of steel." The cutter is sharpened "by simply holding a whetstone in contact with the edge while running;" it is kept moistened with oil by means of a saturated cloth or yarn at one end of a rod, whose outer end is fastened to the extremity of one of the frame arms.

[Printed, 8d. Drawing.]

A.D. 1856, July 18.—N<sup>o</sup> 1688.

HOWELL, FRANCIS BARBER.—(*A communication.*)—"Improve-ments in machinery for making corks." The machinery is carried by a frame "about five feet square, and standing about thirty inches from the floor." The driving pulley is mounted on a horizontal shaft, to which is geared a vertical shaft; this latter shaft "occupies the centre of the machine," being journalled "within or to an upper rail" of the frame, whilst its lower end is held in a step "which rests upon and is capable of being raised or lowered by a foot screw." This central shaft rises about six inches above the frame, and at its upper end is keyed a horizontal wheel to which are fastened four suitably shaped and adjustable cutters. "The verge of the cutting wheel is laid off in eight nearly equal parts, formed by alternate cutters and spaces;" the shape of the cutters (which is described) makes the portions occupied by the cutters "about two inches longer respectively than the spaces." Four "counter shafts" receive motion "from the main driving shaft" in such a way as "to revolve four times for once that the main cutter wheel revolves," and keyed to each are two "bevel wheels having cogs around only one-half of their circuit," whilst connected to these by wheel gearing is a bevel wheel "on the rear-end of each cork mandrel." The mandrels are journalled in pairs (so as to receive a piece of cork between them) "within headstocks" similar to those of a

lathe, and one mandrel shaft of each pair "is connected to its pinion by a feather," so that it can be rotated while being "slid horizontally in its bearings." The sliding is effected by a cam on the counter shaft "operating through a lever." Square tubes are "fixed obliquely to the frame, one at the midwith of each side," and within each is a piston "notched at its top." Pieces of cork, cut "into an approximatively cylindrical form" and "into the proper lengths," drop one by one down a hopper and are caught in the notch. "A small elastic strip of metal" on the descent of the piston "overlays it, and serves to conduct off the parings, and also the finished corks when released by the retraction of the mandrel." The rough cork "is held by the piston in such position as to properly present it to the grasp of the mandrels, and afterwards to assist in supporting the cork during the first action of the paring knife"; the piston then descends to its position by aid of a coiled spring. "An elastic finger" is "brought over the cork in the act of presentation, and serves to hold it firmly within the notch" until it is grasped by the mandrels, when it is drawn back again by a spring in a "guide box."

The action of the machine and the arrangement of all the parts are detailed.

The machine may be arranged to cut corks cylindrical or taper, of different sizes, and at once from the square or block.

[Printed, 1s. 4d. Drawings.]

A.D. 1856, July 21.—N<sup>o</sup> 1722.

SIMPSON, FREDERICK.—"An improved mode of stopping bottles." The upper portion of the bottle-neck is made with "a short internal screw," and the portion immediately below the screw is conical. The screw is "cast, moulded, or turned" in the material of which the bottle is made; its depth "need not exceed two or three revolutions of the thread"; it "combines the distinctive features of the V shaped or angular threaded screw" and the "square-threaded screw," and the space between the thread "is much wider than in an ordinary screw." The cork, which should be cut rather larger than the diameter of the neck, is secured by turning it round two or three times, when it "becomes imbedded in the threads of the screw, and the lower part of it completely fills the conical space."

[Printed, 6d. Drawing.]

A.D. 1856, July 24.—N° 1763. (\* \*)

CATTAERT, CHARLES FRANÇOIS.—(*Provisional protection only.*)—"Improvements in the stoppering of inkstands, bottles, pots, jars, and other vessels, and closing cocks." The improvements consist in placing a flat or other surface of glass on the mouth of the vessel, "which is ground true, or otherwise formed so that the glass surface may lie accurately upon it and entirely close the opening. The glass surface is kept firmly pressed on the top edge of the bottle or vessel by means of a spring placed behind or on the top of the glass, or by a cap or otherwise." To close the fluid way of taps and cocks a screw plug is fitted "into the body of the tap, having at bottom or on its inner end a piece of glass, which when the plug is screwed down lies flat on the top of another piece of glass, which is fixed in a suitable position in the body or fluid way of the tap, and which has an orifice in its centre for the passage of the fluid. The surfaces in contact of the two pieces of glass must be ground true." The screw plug is worked by a handle from the outside. To close taps the patentee employs "a glass plug or conical glass ring fitted round a plug, the surface of the glass being turned true to fit into a conical glass seat or ring fixed in the body or fluid way. The glass plug is worked by a handle, on the surface of which, inside the tap, a smaller roller or boss is mounted excentrically, which on turning the handle to open the tap comes against a roller fixed on a pin at the end of the rod of the plug, forces the plug down out of its seat, and opens the fluid way." "By mounting two rollers excentrically on the handle two glass plugs may be worked in a two-way tap by one handle." The plug and its seat may be cylindrical instead of conical.

[Printed, 4d. No Drawings.]

A.D. 1856, September 3.—N° 2047.

ROBERTS, JOHN.—(*Provisional protection only.*)—"An improvement in the stoppering or closing of jars, bottles, and other vessels, applicable also to the joining of earthenware and other pipes." In jars and like vessels a ring of yielding material, such as cork or india-rubber, is fitted into an annular groove formed in the neck. In the cover a female screw is moulded or cast, and when the thread "is applied to the elastic ring, it

" will take into the cork " or other substance " and hold firmly thereto."

In bottles the screw is generally formed in the neck, and the stopper is made " the yielding medium for obtaining an air-tight stoppering."

[Printed, 4d. No Drawings.]

A.D. 1856, September 8.—N° 2088.

CHALUS, ADOLPHE GILBERT.—" Improvements in stopping bottles and other vessels." The stopper " when out of the bottle or other vessel is still kept adherent to the neck," and " thus ready at hand for being put in or out at will."

A ring or wire is fitted beneath a flange round the neck; the ring is formed with a projection; the ends of the wire are twisted into a projection. A band is hinged to the ring or wire opposite the projection; it is secured to the stopper by a screw or in any other suitable manner; and slots are cut in the farther end, one of which hooks on to the projection " so as to compress the stopper " and " obtain a fastening as perfect as possible. The stopper may be of any material with an elastic ring or entirely of any elastic material.

The patentee does not limit himself " to the above system;" he describes, and exhibits in the annexed sheet of drawings, various modifications, all on the same principle. Sometimes he uses a chain instead of a band; sometimes the band passes through the stopper or an eye on the top of it; sometimes a lever or a rack is pinned to the ring, and takes into an eye fixed in the stopper or forming one end of the band. Sometimes the stopper is made with a notched lug; sometimes it bears a coiled spring either " inside or outside of the bottle."

Figures 33 and 34 " shew an arrangement of a stopper-cock made of wood, metal, glass, or otherwise, which may be applied " to any kind of bottles, so as to allow of their being washed and " filled " without removing the cock.

[Printed, 10d. Drawing.]

A.D. 1856, September 12.—N° 2140.

ELLIOTT, JOHN.—" An improved apparatus for containing and supplying water, gas, and other fluids, applicable also as a fluid meter." This apparatus, which allows of fluids being with-

" employed in the said processes, and to be applied to other " useful purposes." The patentee describes a machine for cutting veneers with a circular knife and one for cutting veneers with an endless band of steel ; he does not lay claim to either, his first claim being for " the use of a circular bed as a support for the " arms or plate to which the circular knives are attached " in a machine " for cutting cylindrical and conical cork stoppers."

The standards for holding the pieces of cork, and the mechanism for turning them round whilst being cut, " are similar," says the patentee, " to those described in the Specification of my former " patent, No. 1536 of 1855, with the exception of the mechanism " for raising and lowering the rack for turning the spindles " between which the piece of cork is held." An endless band, " furnished with projecting parts which form the knives," passes over a large pulley and a tightening pulley. The large pulley " moves in V grooves on a circular bed," or on anti-friction pulleys fitted to the bed. Motion is imparted to the large pulley through a pulley on a vertical spindle which is " keyed to the boss " of the large pulley. To give rotatory motion to the piece of cork when the edge of the knives comes into contact with it, " a strap pulley " is attached by brackets to the large pulley, the strap " passing " over a corresponding smaller pulley " on the same spindle as the tightening pulley. Tappets are attached to the strap " in a " position exactly corresponding with the position of the knives." Every time that one of the knives approaches the cork, the corresponding tappet catches a lever and carries it round until on arriving at a certain position " they become disengaged." The lever is fixed on an upright shaft whereon a bevel wheel is keyed ; this wheel gears into a bevel pinion on whose axle is keyed a spur pinion that gears into a rack, and the rack when raised communicates motion by means of another rack to the pinion on the spindle which holds the cork. A weight brings back the lever to its original position, thereby depressing the racks. " The guide bushes which hold the racks " swivel on the axle of the bevel pinion and on the spindle that holds the cork ; and when a slide with its standards " is withdrawn from the " knife to admit of cutting corks of a larger diameter," the racks " will assume a slanting position." The arrangement for disengaging the cork when cut and for sharpening the knives " is the same," says the patentee, " as described in the Specification of my above-named former patent."

He also intends to use the circular bed with V grooves or anti-friction rollers in connection with horizontal or vertical knives, and "a machine similar to the now well-known endless saw frames, the blade or band having a cutting edge instead of the teeth for cutting shallow stoppers of large dimensions."

Second claim :—"The forming cork stoppers of veneer :"—The veneer is cut into strips and rolled tightly up "in the form of a spiral either without or with a core of shave grass, rushes, or sweet wort." The roll "is squeezed into a form made of sheet steel," and the edges are united with a cement composed of cork dust and nitric acid. The roll is afterwards "subjected to the operation of a grindstone." The core may be made of "cork of inferior appearance." The patentee describes other methods of working up thin or inferior cork.

"For shallow stoppers of large diameter" he prepares a shell of smooth cork veneer, fits it with a bottom of the same quality and fills up the inside with a preparation of cork dust and nitric acid.

Third claim :—"The forming linings of cork veneer" for the necks of bottles, &c., &c., and for covering stoppers and bungs :—"Where ground glass stoppers have hitherto been used," he lines the neck with a strip of veneer, or he cements a strip of veneer round the stopper itself.

Fourth claim :—"The producing from cork a wax-like substance :"—This is the before mentioned cement; a description of it will be found in the series of abridgments entitled "colours, paints, and varnishes."

[Printed, 1s. Drawing.]

A.D. 1856, November 6.—N<sup>o</sup> 2610.

STEVENS, GEORGE HENRY, and FITCH, ROBERT.—"Improvements in locking and unlocking jars, bottles, and other vessels, and making such vessels air-tight." 1. Closing jars and similar vessels :—A ledge is made in the lower part of the mouth to receive a disc covered on the under side by a ring or disc of cork or other elastic substance. The top side of the ledge is "slightly grooved or corrugated" so that the elastic substance "may be imbedded thereon." Nearer the top of the jar are a horizontal groove and a vertical slot. A metal bar with two or more arms is placed in the groove; on or about the middle of

the bar is a boss, through which a screw passes and presses down the elastic substance upon the ledge; and the top of the boss is arranged "so as to present a key-hole" for the passage of a key which turns the screw. If glass or stone stoppers are used, the stopper is ground into the mouth and secured as has been described.

2. Securing the stoppers of bottles and like vessels :—A groove is made in the stopper and a perforation in the neck. The perforation "is countersunk on the inner side" to receive a tube with a head or shoulder. The tube, which is screw-threaded on each side, "protrudes through the hole outside the neck," so that a cap may be screwed on to it "until the base of the cap impinges on the neck." A bolt is screwed into the tube, and its point enters the groove of the stopper. The bolt and cap "may present any desired form to which a key is adapted to turn round the screw bolt."

Another method of securing the stoppers of bottles especially intended "for the safe keeping of poisons and other dangerous drugs :"—The groove, perforation, tube, and cap are the same as before. The bolt does not screw into the tube, but both are so shaped that the bolt may slide in the tube without turning. On the neck of the bolt is a coiled spring that forces the point of the bolt into the groove. The neck is hollow and screw-threaded inside to admit a set screw whereby the bolt can be withdrawn from the groove.

[Printed, 10d. Drawing.]

A.D. 1856, November 19.—N<sup>o</sup> 2738.

WATSON, ALFRED, and WILLIAMS, ALFRED HAMLYN.—  
"An improved cap or top for scent bottles." By means of this invention "scent may be sprinkled upon the handkerchief or otherwise, or may be inhaled without taking off the cap" of the bottle.

A collar is screwed or otherwise fitted to the neck of the bottle. A disc with a central aperture therein extends across the collar, and a tube extends upwards from the disc, being fitted into the aperture. The disc and tube may be formed in one piece. A hollow cork or elastic packing surrounds the tube and "extends just above the level of the top" of it. A cap fits on to the collar "by screw, catch, bayonet, or other suitable joint," and



inside it is "a circular case or cylinder." Perforations are made through the cap "immediately inside the top edge" of the case.

When the cap "is pressed down or retained upon the packing," the apertures are closed by the packing, and the tube is closed by the cap, but "on turning up the cap" the apertures and tube are freed.

[Printed, 6d. Drawing.]

A.D. 1856, November 21.—N° 2758.

TOOTH, CHARLES.—"Improvements in charging or filling up casks or other vessels for containing fermenting liquids." "The charging main" is connected "with the fermenting squares, such as are commonly used by brewers." Connecting pipes lead from the main "to the filling and filling up pipe or main of pipes." This pipe (or main of pipes) is provided with cocks "for connecting the same with the casks," which are supported in a framing by bearing pieces and by cross pieces of metal "temporarily driven into the heads of the several casks." Siphon pipes have the longer leg of each inserted tightly into the bung-hole of each cask and the shorter leg dipping into the yeast trough. A vessel (which the patentee terms a feeder) is "formed crosswise" of the yeast trough and communicates with it by openings through which "the beer passes as it drains from the yeast in the trough." This beer is used "for filling up the casks;" for this purpose the feeder is connected with the filling pipe by a pipe fitted with two cocks, one for charging the filling pipe after the communication with the squares has been shut off, the other "for drawing off the liquids from the feeder and filling up pipe when necessary." Troughs convey the liquid into a settling square by means of cocks, "which are temporarily fixed into each of the several casks during the filling and filling up thereof."

[Printed, 6d. Drawing.]

A.D. 1856, December 3.—N° 2869.

DENIS, JULIEN. — (*A communication.*) — "Improvements in apparatus for corking and uncorking bottles without leaving any air between the liquid and the cork." The framework of the corking apparatus consists of two platforms, the lower standing on four legs, the upper supported by four uprights. The upper

is "of an oval shape with a square piece at the back, through which two of the uprights pass." On the upper is fixed "a double console bearing a lever which works a vertical piston and rod." The piston drives in the cork; it moves up and down through an aperture in the middle of the upper platform. In the aperture is fixed "a small conical cylinder," through which the cork is forced so as to compress it before it enters the neck of the bottle. "At the extremity and round this cone are attached several small blades of metal, whalebone, or other suitable substance;" these "enter the neck of the bottle before the cork is sent in;" they constitute "the principal feature of the invention," as by their means "bottles may be corked while completely filled with liquid." The blades "leave spaces that permit the surplus liquid (after the introduction of the cork) to flow into a recipient at the base of the apparatus."

On the lower platform is a bottle stand; it "is fixed on a ball and socket so that it may not be rigid," and the whole is attached to a vertical rod which passes through the platform. The rod is connected with a rack that serves to raise or lower the stand.

A forked piece is fitted to one of the uprights; it clasps the neck, keeps the bottle in place, and "prevents its being lifted by the withdrawal of the afore-mentioned blades."

The conical cylinder "can be replaced by a less simple but more effectual contrivance" for compressing the cork. The specification contains a full description of this cork compressor, of the connection and size of the various parts, and of the manner of operating with the machine.

"An improved corkscrew:"—On the stem of an ordinary corkscrew "is fixed a small circular plate, at each side of which are two short spikes," and between the spikes "is a small transverse bar supported by a spiral spring;" on the upper part of the bar are "two small projections that catch with others on the circular plate." The action of the corkscrew is explained.

[Printed, 2s. Drawings.]

A.D. 1856, December 18.—N<sup>o</sup> 2995.

HOWELL, FRANCIS BARBER.—(*A communication.*)—"Improvements in machinery for cutting or making corks." The first part of this invention relates to a "feeding apparatus" applicable

to cork-cutting machines; the second to mechanism for cutting corks "of an oval or nearly oval form in the cross section," also applicable to cork-cutting machines; the third to a machine "for cutting cork into oblong pieces."

On a horizontal shaft set in motion by gearing from the driving shaft is a cam, which acts on a projection on the lower end of a bent lever. The fulcrum is "fixed in a bracket bolted to the frame." The upper end of the lever carries the feeder; this "consists of a jaw or holder in which the piece of cork may be placed by the attendant;" it has a spring "at the side against which the end of the piece of cork may be placed, and by which its required position will be regulated." A spring of vulcanized india-rubber or other material withdraws the feeder "after the action of the cam," and a plate with a lip conducts the finished cork to a spout whence it passes out of the machine.

2. On a horizontal shaft is a pinion "actuated at intervals by a half-toothed wheel" on a "cam shaft." The wheel is toothed so as to cause the pinion "to make two revolutions while in gear therewith, but so that the pinion may be out of gear during one half or thereabouts of the revolutions of the said wheel." On the horizontal shaft is fixed a collar (or pair of collars) in position to act upon each of the mandrels through "yokes or connecting pieces" and to impart to the mandrels "the required traversing motion in their bearings." This effect is produced by forming the collar "with adjustable ends," thereby causing it "to act as an excentric." Sometimes a spring is applied to the mandrels "to balance the action" of the collar. The mandrels are set in motion through bevel gear from the cam shaft "by means of a half-toothed" bevel wheel.

3. A rod is connected to the fly wheel in such a manner as "to impart a crank movement to the rod on the revolution of the driving shaft." A cross head is attached to the other end of the rod, and to it are jointed a pair of cutters, "their reverse ends being suspended by cords." The cutters work between guides, and stops, fixed to the table of the machine and adjustable by screws, "regulate the width of the piece of cork intended to be cut off at each operation." The cutters "may at the same time be worked vertically by hand."

[Printed, 8d. Drawing.]

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1857.

A.D. 1857, January 8.—N° 74.

ROBERTS, JOHN.—(*Provisional protection only.*)—"Improve-  
ments in the stoppering or closing of jars, bottles, and other  
vessels, applicable also to the joining of earthenware and other  
pipes." The neck of the vessel and the cover are each formed  
with a screw thread; round the former or inside the latter is  
placed a band of "cork, soft wood, leather, india-rubber, gutta  
percha, or other analogous substance;" the two parts are then  
screwed together, and an air and water-tight joint is obtained.

For stoppering either glass or earthenware bottles, the inventor  
proposes "to form the screw in the bottle neck and to make  
the stopper the yielding medium for obtaining an air-tight  
stoppering."

In vessels "containing chemical and other substances that  
would injure a vegetable or animal fibrous packing," the pack-  
ing may be covered with some protecting material.

Instead of employing male and female screws, "inclines or  
wedges, forming portions of screws, may be made on suitable  
parts of the necks and stoppers;" and these (or the screws)  
may be covered with tin foil or other soft metal or alloy, "which  
will cause them to work easier."

[Printed, 4d. No Drawings.]

A.D. 1857, March 9.—N° 684.

SIMPSON, FREDERICK.—"An improved mode of forming a  
screw in the necks of bottles, jars, and other similar vessels."  
This invention is an improvement on the one for which Mr.  
Simpson obtained letters patent dated July 21st, 1856, N° 1722.  
He forms a screw in the bottle neck by aid of an instrument,  
which is "a modification of the tongs or shears used for forming  
the ordinary necks of bottles." The instrument consists of "a  
flexible spring bent into a bowed or semicircular form at the  
upper part;" it resembles to some extent "the shears used for  
clipping wool from sheep." To the ends of the jaws are  
riveted two pieces of metal "which are shaped to form the ex-  
terior of the neck." In the middle of the spring is fitted a rod,  
whose lower end passes between the jaws; this end "is made

"conical, and a screw thread formed thereon." The upper end passes through the bowed part of the spring and terminates in a cross handle. The upper part of the rod is retained in its place by a nut, and the lower by a transverse rod in which it turns freely.

The melted glass "is placed on the central rod," and the jaws are "brought together to form the exterior of the neck and press the glass into the thread of the screw." When the glass has hardened, the screw is turned by means of the handle, and the bottle is withdrawn, "leaving a moulded screw formed inside the neck."

[Printed, 6d. Drawing.]

A.D. 1857, March 18.—N° 757.

MILLAR, JOHN.—"Improvements in stoppers or closing apparatus for decanters, bottles, and other receptacles." This invention consists of a "mechanical appliance by means of which the stopper of a decanter is removed from the mouth thereof when it is inclined, as in the act of pouring out the contents," and is replaced on its seat on restoring the decanter to its vertical position.

The stopper "is modified in form;" the lower portion "is made of a flatly convex shape;" the mouth of the decanter is of a corresponding concave shape. The projecting flange of the decanter is fitted accurately with a metal ring. To the edge of the ring is soldered or otherwise fastened an upright, and to the upper end of the upright is jointed a short piece or link which projects inwards over the mouth of the decanter." The upper portion of the stopper is encircled by a metal ring made with a projecting piece whereby it is jointed to the link.

For "water bottles, claret jugs, or other wide-mouthed vessels" the link may be dispensed with. If the joint be made at the lower end of the upright, "at its junction with the ring," the stopper may "be thrown completely back, leaving the mouth quite clear for the greater convenience of filling the vessel."

[Printed, 6d. Drawing.]

A.D. 1857, March 30.—N° 876.

SCOTT, JOSEPH.—"Improvements in bottles and their stoppering or closing details." The mould is so constructed, that

when the bottle leaves it, "the extreme end of the neck or spout "is narrower or more contracted than the portion of the neck "nearer the body," and there is a step or shoulder where the wider part is joined to the narrower. The capsule employed fits the narrow portion, and may be lined with cork or other elastic substance "to form a tight joint." It is preferred to shape the capsule "so as to meet and fit the step" and "to be flush externally at that part" with the wider portion of the neck. "Various contrivances may be adopted for holding the capsule "firmly;" a strip of cloth or other material may be made to adhere to both capsule and neck; rings may be formed on both to hold wires or a metallic band; or a groove or grooves may be formed across the head of the capsule for a like purpose.

[Printed, 6d. Drawing.]

A.D. 1857, April 6.—N° 962.

BURRINGTON, GILBERT.—(*Complete Specification but no Letters Patent.*)—"Making the stop funnel for the prevention of waste of "liquids whilst bottling or transferring them from one vessel to "another." This funnel is made "with a perforated moveable "stopper inserted between the upper and lower parts." The turning of the stopper "acts as a syphon on the part below and "enables the latter to retain the liquid until set free by the action "of turning back the stopper." The lower part of the funnel is grooved to allow the air in the bottle or other vessel to escape, and there is a shoulder immediately below the stopper to prevent the funnel from entering the bottle, &c. too far.

[Printed, 6d. Drawing.]

A.D. 1857, April 29.—N° 1204.

HOW, ANDREW PEDDIE.—(*Provisional protection only.*)—"An improved cork-holder for bottles and other vessels." This cork-holder consists of a ring of tin or other metal with a loop of like material pinned or riveted to each side of it, but free to turn on the pins or rivets. The ring is secured round the neck of the bottle, and the loop is passed over the top of the cork.

[Printed, 4d. No Drawings.]

A.D. 1857, May 11.—N° 1323.

BORRON, WILLIAM GEDDES.—(*Provisional protection only.*)—"Improvements in closing or stoppering bottles, jars, and other

" receptacles." A screw thread is cut or moulded on the inner surface of the neck, and a correspondingly screwed stopper of wood or other material is fitted into it. The stopper projects beyond the neck; it is squared to fit the inner surface of a glass cap piece to which it is secured by marine glue or other composition. A ring of cork is passed upon the stopper up against the lower end of the glass cap, so that when the stopper is screwed into the neck "a tight fit" is made. The cap is cylindrical externally and is flush with the bottle neck. This kind of stopper requires neither wiring nor corkscrew.

[Printed, 4d. No Drawings.]

A.D. 1857, May 27.—N° 1504.

DANNE, LOUIS JOSEPH ALMIDOR.—(*Provisional protection only.*)—"Manufacturing gutta percha glue and applying the said "glue to various new purposes." The ingredients and proportions (which are to be modified according to circumstances) are gutta percha 1 lb., resin 1 lb., litharge 1 ounce, and "an adequate quantity of powdered glass."

The gutta percha and the resin are to be melted together, and the other ingredients are to be mixed therewith whilst the compound is in a fluid state.

Among the "various new purposes" the inventor mentions "stopping bottles or cans containing liquids or preserved alimentary substances."

[Printed, 4d. No Drawings.]

A.D. 1857, June 16.—N° 1686.

ELLIS, JOSEPH.—"Improvements in apparatus to be used for "decanting wine and other liquids and for drawing corks from "bottles." A metal tray "suitable in form for receiving a wine "bottle" has a lip at one end in which the neck of the bottle rests. At this end the tray is hinged to one end of a square basket which contains it. "The bottom of the tray is inclined in "order that the bottle when placed therein may be in an inclined "position, and conveniently placed to facilitate the drawing the "cork without lifting the bottle or changing its position." To decant the wine the tray "is tilted by drawing up a handle attached to its free end." The stem of the handle is bent "so as "to form a portion of a circle struck from the hinge joint;" it

passes through a guide fixed to the basket, and in the guide there is "an eccentric having a tendency given to it by a spring to turn and so jamb the stem of the handle." The eccentric offers only "sufficient resistance to the drawing up of the handle to render the motion smooth and uniform," and to hold the handle in position. To lower the tray the eccentric is removed out of contact with the stem "by pressing on a small trigger." Feet on the bottom of the basket "enter holes in a table or stand" to keep the apparatus steady while the cork is being drawn. The basket has a handle by which the whole can be carried; the handle "also facilitates the raising and tilting of the tray."

Other friction or other holding means may be applied to the stem.

[Printed, 10d. Drawing.]

A.D. 1857, June 23.—N° 1751.

HINKS, JAMES, and NIBBS, JAMES SYSON.—(*Provisional protection only.*)—"Improvements in securing and liberating the corks or stoppers of bottles and in the construction of the necks of bottles for facilitating the securing and liberating of corks and stoppers." A metallic band or ring is fixed upon the upper portion of the neck; on opposite points of the band are loops or hooks, through or under which wires are passed and twisted or tightened over the cork. The loops or hooks may be made on the neck "of the glass or other material of which the bottle is made."

[Printed, 4d. No Drawings.]

A.D. 1857, July 1.—N° 1834.

LEFFLER, CARL JOHANN LAWRENCE.—(*A communication.*)—"Improved machinery for cutting corks, bungs, and other similar articles." This invention relates principally to the "peculiar construction" of the cutter employed; it is made "of a long blade of thin steel with an inclined cutting edge." The blade is "rolled up longitudinally into the form of a cylinder of the dimensions internally" of the cork, &c., intended to be produced, and the cutting edge "extends from one end to the other of the cylinder in a helical direction." The cutter is fixed "by a kind of bayonet fastening" to an adjustable block



piece provided with a side plate for the purpose of enabling the attendant to place the piece of cork in a proper position. The piece of cork is pushed forward by a plunger at the inner end of a "reciprocating horizontal rod" against the inclined cutting edge "until all the corners thereof are cut off, and a perfect cork is "pushed out" at the farther end of the cutter.

The internal bore of the cutter may be made "slightly "conical"; the piece of cork may be held stationary, and the cutter may be pressed forward against it; "a slight axial motion" may be given to either the block of cork or the cutter; and the whole may be worked by hand or machinery. Several cutters may be placed side by side in one machine. In fine, the claim is not for the arrangement of machinery but for the peculiar form of cutter.

[Printed, 10d. Drawing.]

A.D. 1857, July 17.—N° 1985.

CLUNES, THOMAS and MACINTOSH, JOHN.—"Improvements in machinery or apparatus for bottling or supplying "vessels with liquids."

This apparatus is composed principally of (1) a trough or reservoir, in which is "a vertically arranged perforated" diaphragm for keeping back any impurities in the liquid, (2) a "self-acting" valvular siphon arrangement," (3) an inclined stage, fastened to the front of the trough by slotted link pieces and stud-pins, and made with grooves or ledges for supporting the bottles.

1. The trough is supported on one side by legs, on the other by a continuation of its front side; it is usually made of wood and lined with metal. On the front edge is "an angular ridge" of wood fixed by thumbscrews and provided with socket plates for the reception each of a bent tube. The diaphragm slides in grooves in the trough.

2. The lower end of each tube descends nearly to the bottom of the trough; the upper end "is formed into a globular socket," the open end of which "is directed downwards." Into the open end is fitted "the upper end of a pendent valvular supplying "tube," whose lower extremity terminates in a disc whereto are screwed a washer and plate. Immediately above the disc are lateral apertures; these are stopped when required by a sliding tube which carries a weight at its upper end. Air is expelled from

the siphon tubes by means of a funnel, "the tube of which is "turned upwards at its lower end and made to fit the bottom "ends of the tubes" within the trough.

The level of the liquid in the trough "corresponds to the intended level of the liquid in the mouths of the bottles to be "filled," so that "waste is avoided." The mouth of the bottle is passed upwards over the sliding tube; the upper edge comes into contact with the weight and lifts the tube; the liquid flows through the lateral apertures; when the supply ceases, the bottle is withdrawn, and the weight brings the tube down over the apertures.

[Printed, 10d. Drawing.]

A.D. 1857, July 21.—N° 2012.

NEWTON, WILLIAM EDWARD.—(*A communication.*)—"Improved machinery for manufacturing screws or screw caps of "sheet metal." The lathe used "is in most respects like the "ordinary hand lathe used in turning." The chuck has a "round threaded screw cut upon its periphery;" it is secured upon the mandrel; and a disc of thin sheet metal is placed concentrically between it and the follower. The disc is held firmly in position by pressure applied to the follower; as it rotates, "a dull "tool" is pressed against it so as to force the projecting portion over the periphery of the chuck, and "form a closely-fitting cap;" a chaser then "forces the sides of the cap into the threaded form "upon the chuck." If a nozzle is required, "the disc portion "of the cap" is to be cut out.

"Other modes may be employed" to give the cap form to the metal, and the screw thread may be afterwards formed on the chuck. The chuck may be "threaded internally," and the cap may be placed inside it.

[Printed, 6d. Drawing.]

A.D. 1857, August 20.—N° 2214.

CHAMBERLAIN, AMOS PIERCE.—"Improvements in machines "for cutting corks and other substances."

The patentee describes two machines, the first for cutting planks of cord wood into strips, for cutting off the outside "which "is usually very rough" and "full of grit," for planing the *inside strips* if required, and for cutting the strips into squares. A

shaft is mounted on uprights on a table or frame so as "to revolve very fast without heating." The shaft carries a driving pulley between the uprights and a large circular knife on each end. The knife for cutting the wood into strips and for planing is flat on the outside and bevelled on the inside; the one which performs the other operation is bevelled on both sides. The carriage whereon the cork is laid has a tongue on the underside which enters a groove in the table. The guide "is moveable so as to suit any desired size of cork wanted." The plank is cut into strips by pushing the carriage along the table.

In the planing part there are two guides, a moveable and a fixed one; the former presses the strip against the latter by means of coiled springs; it is provided with teeth to prevent the strips from slipping, a stop to prevent the teeth from touching the knife, and a handle which pulls it back so as to let the strip be "dropped in between the two guides."

For cutting the strips into squares another carriage "is made and mounted in the same manner as the others" and "the carriage and guide move together." The guide "is made immoveable" at one end, "while at the middle of the carriage and on the side next the pulley is fixed a spring" so as to let the end of the strip which is touching the guide "pass behind the knife when it is cut off."

In the second machine squares are cut into corks either cylindrical or conical. A crank or a pulley, according to the power employed, is attached to the driving shaft "which is supported by caps and bolts to the legs of the table." On the other end of the shaft is an arm, "to the wrist of which is fixed a connecting rod which runs the length of the machine" and is jointed to another arm. The latter arm is connected to a shaft in the middle of which is a rocking beam, and this is united by a rod to a carriage that moves to and fro on "round slides." A chain attached to the carriage passes round pulleys (with teeth to fit into the links) at each end of the machine, "so that at every passage of the carriage from one end of the machine to the other there will be given a turning motion" to the square which is held between two rods (a pair of which is on each side of the machine.) The squares are put into a box, whence they drop into a shoot "on a perpendicular line with the ends of the rods." On each side of the carriage is "a long straight knife so adjusted as to cut a cork round at each passage of the carriage from one

"end of the machine to the other in alternate succession"; the knives are "rounded at each end, flat on the side next the cork, "and bevelled on the outside." On each box is a spring, and as each shoot ascends, its "outside upper corner" lifts the spring, and lets one square drop out; on the descent of each shoot the spring returns and presses a finger into the box. One of each pair of rods advances and seizes the square when the shoot "has "lifted it to the right place," and when the cork is finished the rod springs back and the cork drops down. To make the corks conical "it is only necessary to move the supports of the rods, "which at one end of the machine are cast in one solid piece," but in the middle of the table "are cast in separate pieces."

The foregoing is a description of the leading characteristics of the machines; the specification contains a very full account of the cams, wheels, springs, &c., employed to connect and work the several parts.

[Printed, 10d. Drawings.]

A.D. 1857, November 3.—N<sup>o</sup> 2796.

SEITHEN, JOHN.—"Improvements in machinery for cutting "cork." The principal parts of the machinery are (1) "an "endless or band knife" formed of a thin band of steel, kept sharpened by an adjustable grindstone on each side of it, and "made to rotate over and round pulleys," and (2) "skeleton "drums" consisting of "sets of cork holders, which have a "separate rotary motion communicated to them, and which are "also caused to rotate with the said drums." While one square or oblong piece of cork is being cut, another is placed in one of the holders, and as soon as the cutting is completed, each drum "is moved sufficiently round" to present another piece to the knife. "Each drum is so connected to the machine that "the attendant can regulate and alter at will the distance at "which the drum and holders are to be held from the knife." The drums are fixed on the upper part of spindles which work in sockets "formed in or bolted to the bed" of the framework of the machine. A pulley is keyed on one spindle, and a strap round the pulley finally passes round a pulley on the driving shaft, to which motion is communicated from a treadle. The drum on the other spindle "will revolve by friction from the "band knife," but a "centre piece" also is employed "to assist "in causing the drums to revolve, whereby a considerable degree

" of friction is prevented, and the knife is kept continually " stretched." Metal pieces bolted to the framework prevent the knife from " bending as the cork is cut."

The drums consist of discs mounted on shafts, whose bearings are " in the outer sides of the frame;" round their circumference are bearings in which spindles work. These spindles carry small rollers studded with pins; and over the rollers are placed " wooden blocks also studded with pins." The spindles work through collars and carry at their inner ends holders between which the cork to be cut is placed. " The discs and all parts " connected to them " are caused to rotate by the pins gripping straps, which by means of pulleys, &c., and a crank, are connected " to the opposite side of the treadle." The spindles are drawn away from each other for the admission of the cork by a " bent spring rod or lever " which " presses against the rollers."

The arrangement of the several parts, and a modification of certain parts are described at length in the specification.

[Printed, 1s. 4d. Drawings.]

A.D. 1857, December 30.—N<sup>o</sup> 3191.

NEWTON, ALFRED VINGENT. — (*A communication.*)—" Improved machinery for cutting corks and bungs." This invention relates to a "method of applying and operating expanded " cutters," and to "means of feeding the material to be operated " upon."

1. The lower part of a vertical spindle " is strengthened by a " flange," and " is bored centrally " to receive a sliding rod which is forced downwards by a coiled spring. There are two longitudinal slots in the spindle, and a pin passed through the rod allows the rod to slide, but compels it to turn with the spindle. A collar fitted loosely to the spindle is connected to the rod by a pin " which passes transversely through the two." In the spindle are other two slots " extending to the lower extremity and into " the flange " to receive two rods, at the lower ends of which cutters with sharp bevelled edges are formed or attached. The upper ends of these rods have pins passing transversely through them " and fitted in recesses " on opposite sides of the spindle; these pins " are capable of working laterally in the recesses." To the opposite sides of the collar springs are fixed; they press against the rods and hold them " against the bevelled ends of a

"plate" which is "inserted tightly through the lower part" of the sliding rod.

2. The material to be cut is placed on a horizontal bed which is supported by two cams. The bed is provided with upright slides and "is confined to the cams by spiral springs" at each end. The cams are situated one at each end of a shaft, which is worked by means of a worm wheel and customary wheel gearing. Both the spindle and the bed receive motion from the same shaft by the usual pulleys and straps.

"The operation of the machine" is explained in the specification. The advantage claimed is that the cutters "are caused to cut the corks or bungs of a true conical form."

[Printed, 8d. Drawing.]

## 1858.

A.D. 1858, January 13.—N° 55. (\* \*)

ROBERTSON, PATRICK.—(*A communication.*)—(*Provisional protection only.*)—"Improvements in inkstands." The invention is described as follows:—"The ink vessel or holder is made of "vulcanized india-rubber, or other suitable flexible and elastic material. Through the upper part of the vessel the hollow stem of a glass or other suitable dipping cup descends, so that its lower end is pressed on the flexible elastic bottom of the vessel, which forms or acts as an elastic valve to close the bottom of such hollow stem of the dipping cup, which gives way and allows the ink to pass when pressure is applied to the ink vessel."

[Printed, 4d. No Drawings.]

A.D. 1858, February 18.—N° 314.

JONES, FREDERICK.—"Improvements in machinery or apparatus for cutting 'piassava' or other fibrous substances employed in the manufacture of brushes, which said improvements are also applicable to other purposes of cutting." By means of this machine cork wood may be cut into strips, and by an alteration hereafter described, the machine may be employed "for the purpose of cutting circular corks from the solid block."

1. Two bars slide vertically in the framing of the machine; they are connected together and are also in connection with cranks upon "driving gearing" by means of rods which extend from the top of the bars to the cranks. A knife is secured to each bar; it extends from one bar to the other across the machine, and as the cranks rotate, the required motion is given to it. The cork is placed "in an adjustable gauge," and is retained therein by a pressing lever.

2. The knife is removed, "and a framing containing a series of circular cutters is substituted." The inner surface of the cutters is slightly tapered, corresponding to the taper of the cork. "By any suitable arrangement of mechanism with the above-described machinery these cutters are made to revolve rapidly, as the sliding bars cause them to descend slowly through the block of cork." The corks fall "from the interior of the cutters as they rise for the succeeding stroke."

[Printed, 10d. Drawing.]

A.D. 1858, February 20.—N<sup>o</sup> 330.

EDWARDS, HENRY.—"Improvements in stoppers for feeding bottles and other vessels." The stopper is made with a passage through it. The passage is for a portion of its length conical, the larger end being towards the interior of the vessel. A conical plug fits accurately the passage; it is made with a stem which extends above the passage and when pressed on causes the plug to move inwards and admit air into the vessel. The plug is constantly pressed upwards by a "vulcanized india-rubber spring in the form of a case or covering to the lower parts of the stopper." The spring is perforated in one or more places so as to allow air to enter the vessel when it is pressed down by the plug.

"The form of the exterior of the stopper may be greatly varied according to the class of vessel in which it is to be used." The form of the spring may also be "varied according to the purpose for which the stoppers are to be used."

[Printed, 6d. Drawing.]

A.D. 1858, February 27.—N<sup>o</sup> 388. (\* \*)

KNOTT, JAMES.—"An improved feeding bottle." This consists, first, "in the shape and configuration of a bottle or feeder, with

“ two flat sides and taper neck, and the inlet hole at the upper side, so that when the vessel is filled and laid aside, no portion of its contents can run out.” To the taper end an elastic teat is attached, which may have a strainer, “to prevent the smallest particle of hard food being conveyed to the stomach.”

Secondly, “A stopper valve, for regulating the supply of air for the flow of the liquid by suction.” This is a stopper for the inlet hole at the upper side, through which stopper is a hole with a valve for the admission of air, “when suction is applied to the teat or nipple;” the valve is made of elastic material.

[Printed, 8d. Drawing.]

A.D. 1858, April 1.—N° 698.

NEWTON, WILLIAM EDWARD.—(*A communication.*)—“Im- proved machinery for manufacturing corks.” The cutter is a hollow rotating cylinder; the piece of cork (previously cut square) is pressed against it by a reciprocating pusher or bar; the angles and outer portions of the square are cut off by the cutter; the cylindrical cork enters the cutter, and is thrust out by the following one from the cutter into a trough. A horizontal bar extends the whole length of the machine; it carries “a pendent bar” working in guides which are capable of adjustment nearer to or farther from each other according to the size of the cork to be cut. On each side of the guides are bearings which carry hollow shafts, and the cutters are screwed on to the inner ends of the shafts. The cutters “abut against the guides;” they are provided with spring pieces “to facilitate the removal of the cuttings.” The various parts “are mounted upon longitudinal traverses,” and pulleys are keyed upon the shafts. The horizontal bar has its reciprocating motion communicated to it by a cam mounted on a shaft below, which is driven by a strap passed round a pulley on the shaft. The cam rotates between two pendent arms attached to the under side of the bar and moves it to and fro in guides.

[Printed, 10d. Drawings.]

A D. 1858, April 1.—N° 702.

ROBINSON, THOMAS FREDERICK.—“Improvements in apparatus for cutting cork.” The patentee describes (1) a machine



for cutting squares or quarters of cork into cylinders or cones;  
(2) a machine for cutting cork into squares or quarters.

1. The main shaft (which receives motion from a steam engine or other power) has fixed upon it a pinion that is connected by wheel gearing to a hollow axle. This axle turns freely in bearings in the framing, and the axle of a circular cutter passes through it. The axle of the cutter is formed with a groove for the reception of a rib on the hollow axle, so that the former can slide vertically in the latter, but "is controlled to rotate" with it. "This progressive movement" of the cutter is obtained through a toothed wheel on the main shaft, which gears with pinions and toothed wheels, the last being fixed upon a collar "formed externally with a neck which is held with a capability "of its freely revolving" within the upper bearing of the hollow axle, "whilst internally it is formed with a thread or worm" which takes into a thread cut on a tube which embraces the upper end of the cutter axle. The collar has in it a groove to receive a feather projecting from the bearing "to prevent the "collar from turning as raised and lowered by the screw." After the cutter axle "has had endway motion given to it" to the extent desired, "the direction of such motion is reversed" by aid of a lever with a forked end which embraces a neck formed on the shaft of the last mentioned gearing.

The squares of cork are secured each between two holders, which are mounted on a cylindrical frame "and have simultaneous "rotary motion given to them" when brought into contact with the cutter. The axle of the frame is in gear with the main shaft and the rod of an eccentric, having a hooked end, takes into notches in the periphery of a wheel on the frame axle "so as to "move that wheel partly round a distance equal to that between "one notch and the next." The parts required for this action of the rod are described. Upon one of the axles employed in the gear for connecting the frame and the main shaft is a pinion, which by means of an intermediate wheel "gives continuous "rotary motion" to a wheel whose teeth "are in a position to "actuate the gear of each cork in succession as it is brought "under the operation of the cutter." The gear of the cork holders, the method whereby one of each pair slides in its bearing and is kept up against its cork, and the contrivances "in order to "stop the traverse" of the cutter axle "beyond that required "in either direction" are explained.

In some cases a length of cork sufficient to produce two corks is placed between each pair of holders. Sometimes the cork is moved towards the cutter ; the arrangement for such purpose is described. Sometimes the machine is arranged for "giving motion to the cork towards the knife in combination with a " traverse motion to the knife."

2. "A rotary disc knife" has its axle supported in a frame in such manner that it may in addition to its rotary motion "have a " progressive motion to cut through the cork and back again." Rotary motion is given by a strap from a steam engine or other power ; motion to and fro is given to the frame by means of a screw "which is formed with necks" whereby it may simply rotate in its bearings. The screw "is embraced by a nut with a " female screw formed therein affixed to the frame" and "variations in the direction of motion" are obtained in the following manner :—A strap from a steam engine or other power is capable of being shifted to either of these pulleys, one of which is a loose pulley. One of the other two pulleys is fixed upon a hollow axle, upon which is a pinion whose teeth take into the teeth of a wheel on the screw axle "to give motion thereto in one direction." The axle of the other of the two pulleys passes through the hollow axle ; it carries a pinion which by means of an intermediate wheel gives motion to a toothed wheel also on the screw "to give " motion thereto in the opposite direction." The frame carries a projection in position to act upon adjustable stops on a slide, "which by its fork effects the shifting of the strap from one to " the other" of the two pulleys. A stud, projecting from the slide and acted upon by a wedge-shaped piece on a spring, assists "in carrying the fork over the loose pulley."

The edge of the cork rests against stops or guides which "adjust the length to be cut off;" and "either of them is " capable of being raised into position" by aid of treadles, the arrangement of which is described.

[Printed, 2s. 6d. Drawings.]

A.D. 1858, April 7.—N<sup>o</sup> 743.

GILBEE, WILLIAM ARMAND.—(*A communication.*)—"An improved machine for corking bottles." The machine is portable ; the standard (of cast iron or other metal) which carries it may be fixed to a table by a pressure screw. The standard is cast with a *vertical guide* in which a plunger of steel or other metal works.

The head of the plunger is attached to a lever by a pin, and to ensure "a direct vertical stroke" the outer end of the lever is pinjointed to a rod, whose lower end is pinjointed to a bracket of the standard. The cork is placed in "a conical mouthed tube" or funnel," which is introduced "into the neck of the bottle" by lifting the latter to it." In order that the corks may be "placed at the same depth" in the bottles, a small rod works "parallel to the plunger in a suitable guide." The bottom of this rod is formed with a head, "which presses on the edge of" the neck of the bottle "when it is made to descend by a stud pin fixed to the head of the plunger. The upper part of the rod "is furnished with a tubular cap" in which a helical spring is placed for raising the rod to its original position.

The patentee describes the mode of using the machine and its advantages "over those at present employed."

[Printed, *ed.* Drawing.]

A.D. 1858, April 19.—N° 851.

RIDGWAY, WILLIAM HENRY. — "Improved apparatus for" opening the covers of jugs." The cover is hinged to the jug and carries underneath a lever "projecting towards the handle" and having the hinge of the cover as its fulcrum." A pin passing through a socket and "placed within easy reach of the" thumb "bears upon the short arm of the lever. The lever is raised by depressing the pin, which may be pinjointed to the short arm.

[Printed, *ed.* Drawing.]

A.D. 1858, May 12.—N° 1071.

KNIGHT, RICHARD. — "Improvements in apparatus for refrigerating, also for bottling aerated liquids, and in the preparation" or storing salts for the production of artificial mineral waters." The bottling apparatus is composed of (1) a table, (2) a bottle stand or block raised by a treadle whose connecting rod passes through the table, (3) a frame carrying a socket, through which the cork is forced, (4) a "forcer at the end of a bar which moves" vertically in guides." The socket is of sufficient length "to" receive a cork above a lateral opening, which is in connection "by a pipe and stop-cock with the vessel in which the aerated" liquid is prepared."

The bottle being placed on the stand and raised up to the socket, "a cork is introduced and pressed into the upper part of the socket, but not so far down as to cover the lateral opening;" the stop-cock is then opened, and the liquid flows into the bottle, "the atmospheric air in the bottle being allowed to escape by a quick motion of the foot slightly releasing the contact of the neck of the bottle from the under part of the socket before forcing the cork into the neck."

[Printed, 8d. Drawing.]

A.D. 1858, May 26.—N° 1178.

LUIS, JOZÉ.—(*A communication.*)—"An apparatus for cutting square-headed corks, and for corking bottles with the same." "A cylindric piece of steel as small as possible (thicker near the edge and a little more than half an inch in length, as much in the interior as the exterior to facilitate the cork freeing itself, and longer or shorter according to the length of cork to be made), for making corks" is "moved by a lathe, the axle of which is pierced through and through for the disengagement of the cylindrical corks." "The square-headed cork does not enter in the tube further than is desired; it is withdrawn by the workman after being subject to the knife." Connected with the lathe are (1) a "knife for cutting the cylindrical part of the cork leaving the head square;" (2) a support for the knife; (3) a wooden slide "for guiding the hand of the workman;" (4) "a little wheel, which by a motion backwards and forwards removes the cork cuttings."

[Printed, 8d. Drawings.]

A.D. 1858, June 8.—N° 1288.

QUINCE, JOHN CLIFF.—"Improvements in stoppers for bottles and jars." The neck of the bottle or jar is made with a projecting ring on its exterior. The stopper is made with a deep groove "to receive the upper part of the neck" and with "a plug or solid portion fitting into the mouth of the same." A washer of some elastic material is introduced into the groove and fills up "the grooved space between the substance of the stopper and the top of the bottle or jar." Grooves are formed in the upper surface of the stopper, so that a wire or other means of attachment may hold the stopper "permanently on the bottle or

“ jar in the usual manner.” When the stopper is pressed down, the bottom is brought on or near to the projecting ring.

[Printed, 8d. Drawing.]

A.D. 1858, June 10.—N<sup>o</sup> 1320. (\* \*)

DAVIS, WILLIAM.—Crochet needles, &c. and their stocks or pads. The tang of the needle is made slightly taper, and without any shoulder. This tapered part fits into a correspondingly tapered socket in the handle or sock. Thus needles with various tapers may be inserted in the same stock. At the end of the tapered socket, that is to say, at its apex, is a transverse hole. When it is desired to remove the needle, the introduction of a common nail or any like article in the transverse hole will force out the needle. This invention also applies to corkscrews.

[Printed, 8d. Drawing.]

A.D. 1858, July 12.—N<sup>o</sup> 1558. (\* \*)

NORTHERN, WILLIAM.—“The application of stoneware or earthenware, coloured or plain, to improved and original designs.”

The sixth part of this invention relates to constructing cylindrical or square vessels, with an orifice at one side on the top of “ sufficient diameter (varying according to the size of the vessel) “ to admit of a ground-in stoneware stopper, with a hole through “ the top, or a screwed wooden-shouldered bung, with a hole “ through the centre to admit of a tap;” another hole is in the top for a ventpeg.

The seventh part relates to constructing jars or vessels so as to be hermetically sealed:—On each side of the neck, which has a groove round it, are two projections or niches, according to the lid used; the lid has a projecting ring inside, with two portions of the ring cut away sufficiently wide to admit of the lid passing over the projections; “two scotches inside the lid” fit on the houlder of the jar, “and by a slight turn either the ring or “ scotches occupy the groove round the neck;” a slip of parchment, skin, or paper “is pasted over the joint,” or “to make it “ more secure, an india-rubber or elastic ring or collar may be “ placed round the flange close to the inside top of the lid.”

Eighth:—Mangers and troughs, with a projection inside and around the upper part prevent the food of cattle from being wasted.

Ninth :—Coloured designs in various colors are applied to the exterior of stoneware jars by using the metallic oxides of the colour desired with the ordinary fluxes, and afterwards “ dipping them into a white stoneware glaze, thereby preventing the “ extreme action of the heat from destroying the colour.”

[Printed, 8d. Drawing.]

A.D. 1858, July 15.—N° 1602.

BETTS, WILLIAM.—(*Provisional protection only.*)—“ Improve-  
“ ments in the manufacture of capsules, and in the apparatus to  
“ be employed therein.” The capsule is made “ considerably  
“ stouter ” than ordinary capsules ; it is placed on a mould  
which has on it “ a male screw of the same size as a screw formed  
“ on the neck of a bottle, to which it is intended to apply ” the  
capsule. The mould and capsule are then caused to rotate “ and  
“ at the same time by the action of the screw moved in a lateral  
“ direction.” A disc pressed against the capsule “ forces it into  
“ the indentations of the screw mould, and at the same time  
“ embosses the raised portions of the screw, and a stiff screw  
“ capsule is then formed.”

[Printed, 4d. No Drawings.]

A.D. 1858, August 3.—N° 1762. (\* \*)

JOHNSON, JOHN HENRY.—(*A communication.*)—“ Improve-  
“ ments in inkstands.” This invention “ relates to a peculiar  
“ construction and arrangement of inkstand whereby the evapo-  
“ ration and consequent clogging or thickening of the ink is  
“ avoided, whilst at the same time the receptacle is so constructed  
“ that there will be no danger of spilling the ink should it be  
“ accidentally overturned.” The body of the inkstand may be  
wholly or partially of glass, metal, or other suitable substance.  
At the bottom is a well or reservoir into which a plunger fits  
fluid-tight. Up the centre of the plunger and opening at the  
top into a “ trumpet mouth ” dipping cup is a passage having  
its lower portion considerably contracted. The upper part of the  
plunger has a stopper formed on it which fits fluid and air-tight  
when the plunger is down in the neck of the inkstand. Notches  
or slots extend “ half way down the sides of the plunger and  
“ stopper, and the sides of the well and neck respectively,” and  
by turning the stopper and plunger (without elevating them)

until these notches coincide, the dipping cup will be emptied; a further turn will render the plunger fluid-tight in the well. The same results may be obtained by a modification of the lower portion of the plunger. It "may be expanded and provided with a small nipple, which latter only would require to be ground to fit a corresponding depression in the bottom of the well;" or a small cylindrical opening or chamber may be formed in its under side, "which chamber fits fluid-tight over a nipple or piston formed on and projecting internally from the bottom of the inkstand."

[Printed, 6d. Drawing.]

A.D. 1858, August 20.—N° 1891.

PEARCE, WILLIAM.—"Improvements in the manufacture of air-tight bottles, jars, or other similar articles." The neck of the bottle or jar is moulded with one, two, or more projections or lugs on the outside. The cover is made with "stoppered grooves, sometimes termed bayonet joints," on the inside, and with cuts from the under edge, all corresponding in size and number with the lugs. In the interior of the cover is placed a piece of cork or other elastic material, "the diameter of which is rather larger than that of the upper edge of the neck."

When the lugs are passed into the cuts, the cover is pressed down and partially turned, "forming a perfectly air-tight covering."

[Printed, 10d. Drawing.]

A.D. 1858, September 4.—N° 2005.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from J. C. J. L'Hôte.*)—"Improved apparatus for receiving, containing, and delivering liquids." The liquids are such as "on coming together react chemically upon each other, producing effervescence, &c."

One apparatus consists of "two or more vessels combined together," or one vessel divided into two or more compartments, each furnished with a spout. All the spouts have "a common point of delivery," so that the liquids flowing from the several vessels or compartments "shall mingle and fall together into the cup, glass, or other vessel which receives them." Inside the vessels or compartments are screws "to prevent the exit of

"deposits with the liquids poured out," and each vessel or compartment has an opening at top. All the openings are closed "by one lid or cover or by more than one."

Another apparatus "to contain supplies of the solutions" is similarly made, and each vessel or compartment is provided with a tap.

[Printed, *ed.* Drawing.]

A.D. 1858, September 9.—N° 2039.

LUIS, JOZÉ.—(*A communication.*)—(*Provisional protection only.*)—"An improved life preserver raft or buoyant mattress." This invention belongs to the present series inasmuch as the stuffing of the mattress is cork. For this purpose "cork shavings" are used, each shaving being cut "so as to have the form of a scroll spring." This form gives the mattress "greater elasticity," makes it "more pleasant to sleep on," and renders it "more buoyant."

[Printed, *4d.* No Drawings.]

A.D. 1858, October 7.—N° 2229.

NOUVEAU, JEAN CLAUDE.—"Improvements in stopping or stoppering bottles and other vessels containing non-gaseous liquids." The object of this invention is the stoppering of bottles "so as to keep the contents hermetically closed," and yet afford means for pouring out the contents and stopping the flow at pleasure. The cap employed is fitted to the neck by screwing, bayonet joint, or other mode of connection. Connected with or forming part of the upper portion of the cap is a "tubular passage" communicating with a spout. Through the tubular passage a hollow stem passes, having at the bottom a valve or plug rounded off "for the freer passage of air" and rendered airtight by a washer of cork, india-rubber, or other suitable substance; near the top a coiled spring for keeping the stem up in its place, and at the top a knob. In the side of the stem opposite the spout is an orifice, and in the upper portion of the cap a like orifice, with which the one in the stem can be made to coincide; there is also an orifice in the stem near the bottom.

On pressing the knob the spring will be forced down and with it the stem and plug, bringing the orifice in the stem opposite the one in the cap. By this means "the liquid will readily flow out



“ through the spout when the bottle is inclined, and will continue to flow until pressure is removed from the knob.”

In a modification shown in the sheet of drawings the stem is solid; air is admitted “through a lateral passage,” which is “a fixture instead of shifting.”

[Printed, 6d. Drawing.]

A.D. 1858, October 18.—N° 2320.

POWELL, WILLIAM AUGUSTUS FREDERICK. — (*Provisional protection only.*)—“Improvements in stopping or closing jars and “bottles.” The stopper is formed on its under side with a shoulder, which fits on to a corresponding seat within the neck of the jar or bottle, a washer of india-rubber or other elastic material making an air and water-tight joint when the stopper is pressed home. On the upper surface of the stopper are two grooves at right angles to each other for the reception of wires or strings, which being passed round the neck and tied over the stopper secure the latter in its place.

[Printed, 4d. No Drawings.]

A.D. 1858, October 28.—N° 2409. (\* \*)

MUNRO, WILLIAM.—“A new manufacture of capsules and “other metallic articles” by means of electro-deposition.

The depositing solution consists of a solution of sulphate of tin; sheets of lead are electro-coated with tin to the thickness required, “and the combined metal may then be rolled down to “a suitable thinness by ordinary flattening rollers or other suitable means. The sheets so produced may then be made into capsules or other articles; or, capsules or other articles previously made of lead may be coated with tin by putting such capsules “or other articles on the zinc wire” [of the galvanic arrangement?] “instead of the plate of lead.”

To prepare the sulphate of tin solution, metallic tin is dissolved in muriatic acid, and the carbonate of tin precipitated therefrom by means of a solution of common salt. The carbonate of tin is then washed and suspended in water; the addition of a certain amount of sulphuric acid gives the solution of sulphate of tin which is used in this process.

[Printed, 4d. No Drawings.]

A.D. 1858, December 7.—N° 2799.

WILLIAMS, CHARLES, and ELLISON, WILLIAM.—(*Provisional protection only.*)—"A new mode or method of securing and "liberating the corks and stoppers of bottles." The bottle is pierced with holes through the neck, and a pin of metal, wood, or other material, is passed through the holes and through the cork or stopper.

[Printed, 4d. No Drawings.]

A.D. 1858, December 30.—N° 2988.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from M. Chamblant.*)—(*Provisional protection only.*)—"Improvements "in stoppering or closing bottles, jars, and other like vessels." Two screw threads are cast or formed upon the neck of the bottle; they are by preference "of a diminishing pitch from the mouth "downwards." On opposite sides of a capsule "two indentations" are made so as "to screw into or under the screw "threads" and retain the capsule on the neck. The top of the capsule is furnished on the inside "with a block of cork, caoutchouc, or other suitable elastic material," so that the bottle "may be hermetically closed by screwing the capsule tight down "on the neck." If the screw threads are of glass, their under surface should be roughened "to prevent the indentations on the "capsule accidentally slipping up them."

[Printed, 4d. No Drawings.]

## 1859.

A.D. 1859, January 1.—N° 1.

PITMAN, JOHN TALBOT.—(*A communication.*)—"An improved "mode of making and fitting bungs to casks and other vessels." This invention "consists in forming a screw on the bung or "stopple, and a corresponding one at the hole in the stave of the "barrel or cask by means of burning." This mode will produce "in consequence of the smooth charred surfaces an air-tight fit, "and one not to be effected by any cut made by a tool." A mandrel "with a screw cut on the same corresponding with "the screws on the burners," is mounted on a stand. The

bung, or the stave holder with the stave, is placed on one end of the mandrel "for the purpose of being forced against its proper "burner properly held and adjusted by any suitable device." The burners when heated and adjusted "are not intended to "revolve, but to remain stationary" while the mandrel makes the required revolutions. The stave holder is constructed by placing jaws or clamps upon a screw "turning right and left" and supported in uprights; it has in it a "hole to fit the end of "the mandrel" and "a pin to fasten it in place." The screw shaft "operating the clamps" is worked by a crank or wheel.

The sheet of drawings contains figures representing the burner for the bung, the burner for the stave, "a lever for putting on or "removing the bung from the mandrel," and an oven for heating the burners.

[Printed, 6d. Drawing.]

A.D. 1859, January 1.—N<sup>o</sup> 18.

WOOD, ISAAC.—(*A communication from Henry F. Cox and Alexander Millar.*)—"Improvements in cutting and finishing "corks, and in machinery for such purposes." The cork is placed on the wooden top of an iron table, which can be adjusted as to height by screws and nuts. The cutters are attached to the lower ends of hollow revolving spindles which are set in a sliding frame or head; each carries two cutters, one formed with a tooth and "intended to cut the outside surface of the circular "groove;" the tooth "hooks on the cork and keeps the cutter "from bending outside;" the other "is intended to cut the "outside surface of the cork;" it "carries a straight cam on the "outside to clear the cut." Holding rods "press the cork "against the table by springs;" they pass through the spindles, but are prevented from revolving by forks "which embrace the "square part of nuts" on them.

The spindles revolve by means of belts which receive motion from a drum. The drum shaft is supported by arms which turn freely round the main shaft; the arms are connected by links to the short arms of bell-crank levers, from whose long arms weights are suspended, the object being to keep the belts "always tight."

The frame moves up and down by the following arrangement:—The main shaft carries a pinion which gives motion to a train of wheels and pinions, thereby rotating slowly a shaft whereon two cams are keyed, one on each side of a sliding rod. This rod is



capsules, called "screw capsules," are "raised by stamping in "the ordinary manner;" they are made of the usual material (lead coated with tin) but "considerably stouter."

The apparatus for giving them the screw comprises the following parts:—A metal frame "resembling a lathe headstock" carries two bearings whereon is mounted a horizontal mandrel capable of rotating and of sliding for a short distance within them. At one end of the mandrel is a crank handle, and at the other a screw thread corresponding to that which is to be formed on the capsule. "An arm or horizontal handle" working on a centre has fixed to it by a binding screw a tool which carries at its end a disc revolving on a pin. "This disc is made in "two parts, which can turn independently the one of the other." A bar, revolving partially round a centre, carries a slide which is pressed forward by a coiled spring.

The bar being "turned to one side," and the capsule being "placed over the end" of the mandrel, the slide is "drawn back," and the bar is "returned to its proper position," so that the end of the slide "presses the capsule firmly" against the end of the mandrel. The bar "is kept in its place during the operation" by a spring. By means of the arm the tool "is brought against the capsule, which is thus indented, that portion of the disc which is of the larger diameter entering the indentations of the screw, whilst the other part, which is milled on its surface, rests on the top of the thread." The mandrel is caused, whilst it revolves, to traverse longitudinally by a wooden block wherein "a portion of a screw-thread" is cut for the purpose. When the capsule is completed, the arm is released, the slide "is turned out of the way," and the capsule is unscrewed off the end of the mandrel. A stop, coming into contact with a projection on the mandrel, "stops its further movement and prevents injury to the wooden block."

[Printed, 10d. Drawing.]

A.D. 1859, January 19.—No 159.

POWELL, WILLIAM AUGUSTUS FREDERICK.—"Improvements in stopping or closing jars and bottles." The stopper is formed on its under side with a shoulder, "which fits on to a plain or grooved seat" upon the neck of the jar or bottle. An interposed washer of india-rubber or other elastic material, "sprung into a recess" in the neck of the stopper, makes an air and

water-tight joint when the stopper is pressed home. On the upper surface of the stopper are two grooves at right angles to each other for the reception of strings or wires, which, being passed round a projection on the neck and then fastened on the top of the stopper, secure the latter in its place.

The seat may be formed within the neck of the jar or bottle to receive the stopper furnished as before with an elastic washer and grooved at the top.

[Printed, *ed.* Drawing.]

A.D, 1859, January 22.—N° 204.

HENRY, MICHAEL.—(*A communication from Messrs. Dalverny and Thonzellier.*)—(*Provisional protection only.*)—"Improvements " in machinery or apparatus for manufacturing corks and bungs." The machinery is supported on a table or frame, "which may be " cut away in front for a handle or driving instrument to pass " through, and supports a plate on which work two other plates, " one sliding in guide grooves thereon, and the other moving in " a contrary direction and fitted with two bars, whereof one is " attached to the under plate, and the other works or turns " on itself by pins connected to the plate, and may be fastened " when required." A leather bed "between the bars and cover- " ing the plate" holds the cork to be cut; it protects the edges of the cutting tubes, having in it "as many openings as there are " corks to be produced." "Along supports fixed to the lower " plate, clamped to the walls, and connected at top by ties, or " otherwise suitably supported and held, an upper plate connected " to a beam or lever is free to move, being supported by stays, " preferably so connected at the centre as to leave room for the " passage of a moveable rod connected thereat, and thereby to " the plate, and also to the ties, and having the beam or lever " at its upper part." Screw rods are fitted underneath this plate, each carrying a wheel toothed on its periphery and threaded on the inside; a cutting tube is fixed underneath each wheel, and all the wheels may be set in motion and all the tubes be raised or lowered "by driving any one wheel of the train." A self-acting check stops the wheels "immediately on the completion of a " stroke of the cutters." A plate, "having an orifice for each " cutter," guides the tubes in their up and down stroke, and "at the end of every screw rod is a block or plug for keeping the

"cutting tubes straight" and "also for holding the corks down after they have been cut out."

The method of working the machine is described, and certain modifications are given.

[Printed, 4d. No Drawings.]

A.D. 1859, February 5.—N<sup>o</sup> 331.

**MABERLY, FREDERICK HERBERT.** — (*Provisional protection only.*)—"Improvements in apparatus for corking, for drawing corks in taps, in the necks of bottles, in the bung holes of barrels, and in similar articles."

1. Corking:—The corks are compressed "by a screw or screws conjointly with other power," so that they can be easily inserted.

2. Taps:—These are made with a shoulder on the exterior ("which is leathered") and are screwed into barrels: The tap is "hollow and screwed in its inner outward end into which a screw stopper (with its end hollow and screwed internally to receive a cork) is introduced." The cork presses against a shoulder within the tap "and stops the running out of the liquor."

3. Bottles:—The necks are made with a shoulder round the inside and with part of their inside screw-threaded.

4. Corkscrews:—These are "of needle kind, plain or screwed, or wormed, easily and rapidly passing through the cork and then throwing out spring barbs," which "may be shut up" when the cork is drawn.

5. Bung-holes:—These "are screwed and have a shoulder" against which the bungs (which are screwed) press. The bungs have a vent-peg screwed into them; this is "sunk into the bung so as not to be affected by the rolling of the barrel."

[Printed, 4d. No Drawings.]

A.D. 1859, February 5.—N<sup>o</sup> 333. (\* \*)

**TINKLER, ROBERT.**—"Improvements in churns."

The churn described in the specification and shown in the drawings, consists of an ordinary barrel, supported at each end by spindles that work in bearings; the bearings are fixed to a suitable frame. The requisite rotary motion is imparted to the churn by means of a winch handle attached to one of the spindles.

To fix the churn in any required position for introducing the cream or extracting the butter, a bolt fixed to the framing is

capable of engagement with any one of the holes in a segmental plate attached to the barrel. Access is obtained to the interior of the churn by means of a metallic bung, covered on its inner surface with vulcanized india-rubber; the metal portion of the bung "may be electro-plated for the purpose of insuring greater cleanliness and durability."

An "air discharge valve" is attached to the barrel; upon depressing its cap by hand, the air escapes from the interior of the churn through lateral openings into the atmosphere. This valve consists of a conical lift valve attached to a guide spindle; the valve is kept up to its seat by means of a helical spring. "Both the spring and all the parts of the valve and its details are electro-plated, or protected by such a coating as will insure cleanliness and lasting powers."

[Printed, &c. Drawing.]

A.D. 1859, March 16.—N<sup>o</sup> 661.

MORDAN, FRANCIS.—(*Provisional protection only.*)—"A means of keeping a stopper connected with a bottle, jar, or such like receptacle when removed from the mouth thereof." A piece of elastic material or "an elastic medium" is attached to the neck or other convenient part of the bottle or jar and to the stopper, in such manner that, "while the latter may be readily removed from the mouth" of the bottle or jar, "it still remains connected therewith."

[Printed, &c. No Drawings.]

A.D. 1859, March 23.—N<sup>o</sup> 744.

JOHNSON, JOHN HENRY.—(*A communication from M. Masson.*)—"Improvements in machinery or apparatus for the manufacture of sheet tin." This tin or foil is "suitable for capsules, wrappers, tinning glass, and other purposes."

The machinery is carried by a wooden frame fitted with cross bars and secured to a wall. At each corner of the frame is a bracket bearing for the shaft of a pulley, one of which is actuated by a winch handle. The motion of one pair of the pulleys is transmitted to the other pair by endless bands or chains whereto are hooked vessels "the recipients of the molten tin." To produce sheet tin the charged vessels are kept during their descent in close contact with a stretched elastic web. The pressure of

the vessels is regulated by bars connected by rods to the frame. The rods carry coiled springs which yield more or less according as the vessels "contain more or less metal," or "as the thicker or thinner sheet is required to be produced."

The frame may be perpendicular or inclined at any angle, and the means of obtaining the required pressure against the cloth or elastic surface may also be modified."

[Printed, 8d. Drawing.]

A.D. 1859, March 24.—N° 750.

**SHARP, FREDERICK EDWARD.**—"Improvements in machinery for corking bottles." By aid of this machinery, bottles, although of unequal heights, may be corked in a "speedy and efficient manner" by steam, hand, or other power.

A circular metallic slab or table moves upon a framing; wells wherein to place bottle holders are formed in it "all round, diverging from the centre." The table has round its periphery teeth, into which a pinion takes, having teeth on about only one-third of its periphery, so that the table will move a certain distance and remain stationary until the teeth come round again. To prevent the table from going round too far "it is furnished with raised stops," upon which "drops a spring with a hole therein;" the spring is released "by an incline fixed on the top" of the pinion. The bottles on each side of the table come immediately below cones "containing the corks to be driven." The corks are supplied from vertical tubes, through which (and through the cones) plungers secured to crossheads pass. The bottles are forced upwards by cams, which lift cylinders until the ends of the necks "pass into conical recesses, and come into contact with the bottom of the cones." Within the cylinders are spiral springs "which are depressed when one bottle is longer than another, and raise the shorter ones into the required position." To regulate the supply of corks to the bottles "an inclined tongue" with "a receiver" in front "is made to travel from under the tube;" this "pushes the next cork up into the tube until it returns, when the cork next required falls into the receiver," and "is pushed along until it falls into the cone."

The mechanism for effecting the above is fully explained in the specification.

[Printed, 10d. Drawing.]



A.D. 1859, April 27.—N° 1055.

FANSHAWE, HENRY RICHARDSON.—“Improved apparatus or mechanism for drawing-off, filtering, and gauging liquids in butts, barrels, casks, and such like vessels, preserving the contents from deterioration from contact with atmospheric air.” A bag (of air and water proof fabric) is put into the vessel; it must be of such size and form that “the atmospheric pressure” when allowed to enter “will cause it to expand if needful to the full size of the interior” of the vessel. The bag has two holes opposite each other, “close around which pieces of the same material as the bag, forming short tubes, are secured air-tight,” so that when the drawing-off pipe is passed through, one of the tubes “is made to fit air-tight to the edge of the bung-hole or aperture” of the vessel. Down the middle of the bag is passed “a flexible pipe closing the bottom of the bag around the said pipe, as for instance by tying string round the short tube aforesaid so as to bind it air-tight to the said flexible pipe, and so as to allow sufficient length of pipe to reach from the bung-hole to the lowest opposite portion” of the vessel. The upper portion of the pipe passes up through the stopper at the bung-hole.

The apparatus for stopping is as follows:—The upper short tube is made to line the bung-hole and is turned over the outside edge of it;” in this is put a vulcanized india-rubber washer; into the washer is forced a metal ring cut with an internal thread, “into which the external thread on the annular portion of a screw cap” is screwed. The cap is provided with a hole for the passage of the flexible pipe; the hole allows the pipe “to move freely” and air to enter and fill the bag “when from the liquid being drawn off a void is left in the vessel.”

The specification contains a description of the method of “using this invention” and of the gauging and filtering apparatus.

[Printed, 4d. No Drawings.]

A.D. 1859, May 30.—N° 1327.

BREFFIT, EDGAR. — (*Letters Patent void for want of Final Specification.*)—“Improvements in machinery or apparatus for the manufacture of hollow corks.” The only information given is that there is “an arrangement of revolving hollow

" cutters acting against strips of cork pressed forward by wooden pins passing thro' a hollow rest."

[Printed, 4d. No Drawings.]

A.D. 1859, June 23.—N° 1508.

LUIS, JOZÉ.—(*A communication from Jacques Peury.*)—(*Provisional protection only.*)—"A machine for corking bottles." The body of the machine is of boxwood or other hard wood; it is made tubular inside and with a lateral opening for the introduction of the cork. At the bottom of the body is a "place for the neck of the bottle," and at the bottom of the tube an enlargement "where the cork comes out and enters the bottle." A "small groove at the mouth of the tube," says the inventor, "is another improvement to my bottle corker to prevent the piston from pinching the corks." The head of the piston extends above the body and is driven down with a mallet; the lower end carries a metal head, and a leathern washer is placed between the piston head and the body of the machine.

[Printed, 6d. Drawing.]

A.D. 1859, June 23.—N° 1514. (\* \*)

DOULTON, HENRY.—"Improvements in earthenware jars and bottles." This invention relates to forming in the interior of the necks of bottles or jars "projections at intervals apart, and at or near the upper surface thereof." The projections are slightly inclined on the under surfaces. The cover or stopper fitting over the neck has a cylindrical projection descending into the neck, on which are side projections, "which descend below the projections in the interior of the neck, and with inclines on their upper surfaces." A ring of vulcanized india-rubber or other elastic material is clipped between these on turning the cover round.

[Printed, 6d. Drawing.]

A.D. 1859, June 24.—N° 1520.

REDRUP, GEORGE.—"Machinery for the cutting of shives, bungs, corks, spiles, and vent or other pegs." 1. Machinery for cutting bungs and corks "from narrow or small pieces of wood or cork."—A table is supported on two standards "connected near the bottom by a tie rod;" on its top is a bracket carrying brasses in which a hollow spindle revolves. The spindle

slides vertically, the length of the slide being "governed by a collar." The spindle "has a groove cut in part of its length," and set screws in a pulley "placed between the brasses" move up and down in the groove. The spindle revolves by the usual connection with the main shaft; near the upper end "is shrunk a brass collar" revolving in "a strap collar," whereon are "two pins which lie in a slot in either prong of a forked lever." The other end of the lever is connected to the short end of a lever "working on a pin in a bracket screwed to the under side of the table." At the lower end of the spindle is secured a boss "carrying one, two, or three cutter blades," which are "held in their places by set screws passing through a ring." Through the spindle passes "a longer spindle" provided at the lower end "with a presser plate or point," the former "when a cork bung is to be cut," the latter for "a wooden shive or bung." The upper end of the inner spindle is slotted, and in the slot "lies one end of a lever," which is connected in the ordinary manner "to a lever working on the standard tie rod." The latter lever is moved by the foot and causes "the point or presser plate to be depressed as required;" it is weighted and has attached to it a bent rod which passes up through the middle of a block whereon the material to be cut is placed. The rod "on being pressed up by the weight will force off the bung when cut." The block "has two screws passed through from the under side, having their ends filed to a chisel point;" these prevent the material from turning round with the cutters. For wood cutting one of the cutters "has a chisel-shaped point at the bottom;" for cork cutting the cutters are curved. Oilstones are used (by preference) for keeping the cutting edges "sharp and free from cork dust."

2. For cutting spiles and vent pegs "the outer pipe" of one of the pulleys employed to connect the outer spindle with the main shaft is cut with a screw thread to receive a brass cap "which has a conical hole drilled in its centre." A cutter plate held by a set screw has its cutting edge "inclined to correspond to the bevel of the hole in the cap." "At the bottom of the hole is a pin at the end of a spring." The action of this apparatus is described.

The specification contains a description of a modification of the machinery "adapted to work horizontally in a similar manner to a lathe."

3. Machinery for cutting "from large sheets of cork or planks of wood:"—"Nine sets of spindles" are employed, and the action is horizontal. "On the left of the bracket carrying the "wood block" is a standard "with three holes bored in it" wherein a rod and two pins slide. The rod and pins are screwed into a presser plate "in which are secured six other pins, the "whole nine ranging with the centres of the nine inner spindles." The spindles are made longer, and "instead of the brackets carrying the brasses there are two standards having bosses cast on each side, between which on the outer spindles are placed "spur wheels" gearing into each other (in a manner described in the specification.) "All the outer spindles are moved to and "from the wood to be cut" by a hand lever "which is bent to "pass over the three middle spindles, a plate under them being, "screwed to it;" the lever and plate "also loosely embrace a "boss" keyed to the centre spindle. The eight outer spindles have "collars gearing into each other;" the inner and outer centre ones are a little longer than the rest, and the outer one has a fast and loose pulley on it. "Each of the centre inner "spindles" is secured "in a second presser plate;" they are also "passed through and are free to slide in a standard at the "right hand of the machine." The standard "has two tabs at "its lower end;" these carry a pin whereon works a weighted lever, "which moves the nine inner spindles."

4. The patentee sometimes uses a lathe for cutting bungs and corks. He screws "a cutter boss" to the mandrel; he places the material upon "a presser plate and block secured to a pin "sliding in the puppet head," and he pushes the material forward "by a screw working in the puppet head;" the material is held to the plate "by a spindle sliding through the centre" of the mandrel and held to its work by a weighted lever or spring.

5. For cutting off spile or vent pegs he sometimes uses "an "arrangement of a spile cutter and small circular saw attached "to one end of a short shaft," the other end having a fast and loose pulley on it.

[Printed, 1s. 8d. Drawings.]

A.D. 1859, June 28.—No 1540.

NEWTON, ALFRED VINCENT.—(*A communication from Edward Conroy.*)—"Improved machinery for cutting corks." The squares

"venting any escape of gas through the hole at the moment of pressure." The cap "is terminated at its bottom by a perforated plug provided with an india-rubber band, which pressing against the lip of the neck of the bottle stops it up." The hole of this plug is provided "with a wire gauze to prevent the passage of anything else than the liquid." The cap is held on "by a double wire fixed at one end to a metallic ring set at the neck of the bottle, and attached at its other end to the same ring by means of a crank." The wire "passes on a sort of pulley," which is kept in position "by a screw regulating the degree of pressure."

The working of the stopper is explained in the specification.

[Printed, 4d. No Drawings.]

A.D. 1859, July 21.—N° 1715.

HENRY, MICHAEL.—(*A communication from Paul Alexis Adolphe Dalverny.*)—(*Provisional protection only.*)—"Improvements in apparatus or machinery for the manufacture of corks and bungs." The cork is cut by a set of cutting tubes. The apparatus is supported on a table whereon is a bed, and on the bed two plates are free to move, one sliding in grooves, the other working "in a contrary direction," and carrying two cross bars, "one of which is fixed to the lower plate, and the other works on itself by pins connected to the plate, but may be fastened when required." An apron of leather or suitable material "between these bars and covering the plate" supports the cork, "and protects the edges of the cutting tubes after they have passed through;" it has in it as many holes as there are corks or bungs to be produced. "Along supports fixed to the lower plate clamped to the wall, and connected at top by ties," an upper plate is free to move; it is "preferably supported by beams, so connected at the centre as to leave room for the passage of a moveable rod connected there, and thereby attached to the plate and carrying a lever at one end." This plate "carries on its under side a number of screw rods, each of which carries a toothed wheel threaded on the inside;" and to the under side of each wheel a cutting tube is fitted. The wheels are all in gear, so that when any one is set in motion, "the whole will be in work, and so raise or lower the whole set of cutting tools together." A self-acting check stops the wheels "as soon

"as the tubes have completed one cutting operation." The cutters are guided, and the wheels are held in gear "by a guide plate formed with orifices, one for each tube." At the end of every screw rod "is a plug for keeping the tubes straight" and "for holding down the corks which have been cut."

The method of working the machine and certain modifications are described.

[Printed, 4d. No Drawings.]

A.D. 1859, July 22.—N° 1719.

ISHAM, JOSEPH G., and ALBERTSON, STEPHEN D.—(*A communication from Albert Albertson.*)—"Improved machine for cutting and shaping bottle & other corks." This machine contains contrivances for (1) "holding the corks and preventing them from rotating" whilst their corners are being cut off; (2) rotating the corks "by friction on their peripheries" whilst under the action of a finishing cutter; (3) regulating the feeding of the corks to the finishing cutter, so that they shall always be presented to it "with their sides exactly parallel with its edge."

1. Feed rollers revolve in opposite directions. A table whereon the squares are placed is adjustable in height by a set screw. "A rotary cylindrical cutter" running in bearings takes off the corners of the squares. "A stationary cylinder" within the cutter, "and extending to near its mouth," receives the inner ends of the squares and prevents them from rotating "by means of longitudinal projections."

2. As the corks are delivered from the inner end of the cylinder "they drop upon and pass between" feed-rollers which revolve in the same direction and slightly press the corks in their passage. The rollers run in plunger blocks which are adjustable in height, and one roller revolves a little faster than the other, "by which means the corks are continually drawn forward" and "towards the knife."

3. An inclined board conducts the corks from the rollers on to an endless band which moves round other rollers; these revolve in the same direction as the feed-rollers, and one a little faster than the other. The portion of the band immediately beneath the faster feed-roller rests upon an adjustable shelf, which can be varied in height and set obliquely for the production of taper corks. The knife is a disc rotating upon a vertical axis. Stops

or rests "prevent the longitudinal motion of the corks" while under the action of the knife.

The action of the machine and sundry minor modifications are described.

[Printed, 8d. Drawing.]

A.D. 1859, August 8.—N° 1826. (\* \*)

OLLIVIER, LOUIS BERTRAND.—"Improvements in closing or stoppering bottles, jars, and other receptacles." "These improvements consist in forming two holes diametrically opposite to each other in the neck of the bottle or other vessel." "After the cork or stopper is placed in position, a nail, pin, or other rod is forced through it." In capsuling or sealing bottles, &c., the cross pin may be enclosed in the capsule, or it may receive two wires, which pass under the seal and label."

[Printed, 6d. Drawing.]

A.D. 1859, August 24.—N° 1937. (\* \*)

MURRAY, SIR JAMES.—"Improvements in the preparation and bottling or preserving of carbonated cod liver oil, and other aerated liquids." This invention consists, first, in "the revivifying of the aerated liquids, after having been already prepared in the ordinary manner, by repeating the process or processes of aeration after the liquids have been fined, and just before they are bottled, under such pressure as to secure an excess of fixed air."

Secondly, "the preparation of the bottles, by displacing from them the ordinary atmospheric air," "and replacing it by an atmosphere of carbonic acid gas."

Thirdly, "the bottling of the liquids in vessels containing an atmosphere of carbonic acid gas."

Fourthly, "the preparation of the corks, by withdrawing from them the ordinary atmospheric air with its impure vapours or gases, and causing some of the liquor intended to be bottled to enter their pores and saturate them."

[Printed, 4d. No Drawings.]

A.D. 1859, August 25.—N° 1941.

CHAMBERLAIN, AMOS PIERCE.—"Improvements in machinery or apparatus for cutting cork, part of which improve-

"ments is also applicable to cutting paper, caoutchouc, and "other substances." Four machines are described; the first cuts planks of cork into lengths and lengths into squares; the second reduces the squares "to an octagonal shape;" the third rounds them; the fourth removes all roughness and grittiness from cork bark.

1. A spindle revolves in bearings supported on framework; it carries a driving pulley between the bearings and a revolving cutter at each end. Carriages for holding the cork slide on rods; they are each provided with a groove "to receive the lower edge "of the cutter and keep it steady." Guides capable of adjustment determine the width of the strips. One of the knives cuts the plank into strips, the other cuts the strips into squares, for which purpose it is "provided with a notched guide" suitably arranged.

2. This machine consists principally of a frame supporting four spindles, which carry each a revolving cutter, and are driven by bands passing round grooved pulleys and similar pulleys mounted on shafts. There may be added "another pair of cutters" to "dress the ends of the squares."

3. The main shaft carries a crank attached by a rod to the lower end of a vertical lever, which vibrates on a fulcrum near its middle and is linked at its upper end to a carriage. The carriage slides on rods and carries two straight cutters; its under side is furnished with a pin which takes into a spiral groove on a drum. The drum shaft has at each end a spur wheel which by means of other spur wheels drive the spindles for holding the corks. The apparatus for feeding corks into this machine is of the following construction:—A plunger is made with two rollers carrying an endless belt which also passes round a drum. The belt is provided with fingers "of just sufficient width apart to hold the "octagonal pieces of cork which are placed therein as the belt "passes over the drum." The plunger rises and falls by means of a cam (on the main shaft) which actuates a lever. This lever carries a bent rod having at its upper end two or more ratchets that take into a ratchet wheel keyed on the drum axle. The plunger raises a cork until "it is precisely between the discs" on the ends of the cork-holding rods. The left-hand rod is moved to and fro for the purpose of seizing the cork and allowing it to drop when rounded by means of a lever, a spring, and a cam driven by a chain from the main shaft.



4. A frame supports an axle carrying a drum, "around which " are bent steel plates;" in these holes are punched from the back "so as to leave a bur on the outer surface."

Details of the machines, and a method of passing the material from one machine to another "automatically" if preferred will be found in the specification.

[Printed, 1s. 4d. Drawings.]

A.D. 1859, September 13.—N° 2083. (\* \*)

SEITHEN, ANTON BRUNO.—"Improvements in apparatus for " shaping cork stoppers, and in the manufacture of life buoys " and buffers of cork."

This invention consists in the first place in the employment of a grindstone for the purpose of shaping articles formed of cork, such grindstone having grooves in its periphery corresponding to the size of the articles to be operated upon, and the stone being by preference, placed horizontally, such arrangement of the stone admitting of a number of operatives being employed at one time at such stone. The stone may be solid, in which case the operatives would stand outside it, or it may be composed of segments so put together as to constitute a ring connected at one side to a revolving frame or table, and admitting of the operatives applying the articles to its interior circumference, which is in this case suitably grooved. Straight slabs of stone, suitably grooved, and having a reciprocating motion, may be used instead of a revolving stone.

Another part of the invention consists in the use of two mandrels for shaping bungs and other articles of cork, one mandrel being convex, and the other concave; the piece of cork to be shaped is placed between the two and shaped by pressing one mandrel towards the other; any superfluous material is removed by means of a suitable knife or cutter.

[Printed, 4d. No Drawings.]

A.D. 1859, October 12.—N° 2329. (\* \*)

DAFT, THOMAS BARNABAS.—"Improvements in flexible valves."

"A flexible valve is constructed of an elastic flexible tube, by preference of vulcanized india-rubber, which is fixed at its two " ends to two inflexible tubes or instruments having passages " through them, and which are capable (one or both) of rotating

“ so as to twist the flexible elastic tube until it forms a close partition across the passages or the inflexible tubes or other form of instruments, to which the two ends of the elastic flexible tube are fixed.” These valves may be applied to the mouths of jars.

[Printed, 8d. Drawing.]

A.D. 1859, October 17.—N° 2361. (\* \*)

BERRY, GEORGE.—(*Provisional protection only.*)—“ Improve-  
“ ments in the construction of glass and earthenware vessels for  
“ containing fluids, particularly such vessels as are intended to  
“ contain fluids which may exert dynamic force on the stoppers  
“ of such vessels.” These vessels are constructed with two  
necks or orifices, “ closed with proper stoppers, connected together  
“ in the interior of such vessels, and when the internal areas of  
“ such stoppers are alike, the dynamic force, if any, of the con-  
“ tained fluids upon the stoppers is neutralized, and when the  
“ internal areas of such stoppers are unlike, then the dynamic  
“ force on the stoppers is diminished to the difference of the areas  
“ of the two stoppers.”

[Printed, 4d. No Drawings.]

A.D. 1859, November 24.—N° 2658. (\* \*)

LANGFORD, JOHN.—(*Provisional protection only.*)—“ Improve-  
“ ments in inkstands, and in combining with inkstands instru-  
“ ments for holding and damping stamps, labels, and other  
“ articles.” The first part of the invention consists “ in applying  
“ to the dipping cup of an inkstand a diaphragm of vulcanized  
“ india-rubber, the said diaphragm being stretched over the dip-  
“ ping cup, and having a small perforation at its middle.” Perforated diaphragms are also applied to the holes in inkstands in which pens are held when not in use, serving at once as pen-holders and wipers.

[Printed, 4d. No Drawings.]

A.D. 1859, December 2.—N° 2727.

BETTS, WILLIAM.—“ Improvements in the manufacture of  
“ capsules, and in the machinery or apparatus employed therein.”  
This invention relates “ to the embossing in colours portions of  
“ metallic capsules;” it is an improvement on, or rather an addi-

tion to the "machine for making capsules for which letters patent were granted to John Thomas Betts on or about the 16th day of March 1843," N° 9665.

The bed plate, the driving shaft, the cams for actuating the several punch rods, the punches, and the dies are "fully described" in the specification of the patent herein-before referred to." The addition is applied to the last punch and die but one of the series used in forming the capsules. The punch on the end of the punch rod "is faced with leather or other soft substance," and the capsule is deposited on it "by the action of the machine." The embossed die is screwed into an adjustable upright. A "curved palette" or "inking table" is fixed over the die, and a "pair of inking and distributing rollers" travel up and down the palette. The rollers are carried in a frame whose sides "are jointed so as to work on centres" and are "connected at this point to the forked end" of a vibrating arm or bent lever. Two blade springs bear against the ends of the frame "and admit" of a slight yielding action of the forward roller whilst mounting "over the engraved surface of the die." The tail of the lever is jointed to an adjustable link whose lower end is jointed to one arm of a bell-crank. The other end of the crank is jointed to a bent rod which is connected to a bar carried by sliding blocks and receiving its motion from the cam that actuates the punch-rod.

When the machine is in use, the front roller passes over the surface of the die, "which thus receives a coat of colour in readiness for the capsule."

[Printed, 10d. Drawing.]

A.D. 1859, December 3.—N° 2744.

**RUDKIN, JOHN.**—"Improvements in stoppers for bottles." The stopper is composed of a tube of cork or other suitable material and a plug of glass, earthenware, or other material, which screws into the tube. The exterior of the tube is taper, the larger diameter being at the bottom; the interior also is taper having the smaller diameter at the bottom. The screw plug is of the same diameter as the larger diameter of the tube; on the top is a conical head, which, when the plug is screwed in, "enters into" the top of the tube and expands it."

To close a bottle with this stopper, the plug is partially screwed

into the tube, the tube is inserted into the neck of the bottle, and the plug is then screwed home. The cork is by preference softened before screwing in the plug, and when the plug is in, it is left for some time "so that the interior of the cork may set to the form of the exterior of the plug."

[Printed, 6d. Drawing.]

A.D. 1859, December 9.—N° 2798.

BETTS, WILLIAM.—"An improved manufacture of capsules." The improvement consists in producing a colored trade mark or other design upon the capsule, "so that by means of a contrast of colors such trade mark or design is made conspicuous and more readily observable." A spring die is substituted for the ordinary die now used; it is so constructed "by having a portion of the die made separately fitting into a cavity formed in the body of the die and a spring being attached to the separate portion" that, when placed in the cavity and at rest, "it projects beyond the body" of the die. In stamping the trade mark or design on the capsule "this projecting portion is first colored; and then by forcing the capsule against the die in the method usually adopted," the projecting portion "being slightly below the surface of the body of the die," a portion of the capsule corresponding with the shape of the projecting portion "will be raised and colored by one operation." Other means may be adopted for producing the same effect, but the patentee prefers the one described.

Capsules may be manufactured also "with portions in the shape of trade marks or other devices cut or punched out of the top or sides," and colored tin foil or other substance may be placed under the cut out part, "so as to present a strong contrast to the surrounding or adjacent portion."

[Printed, 4d. No Drawings.]

A.D. 1859, December 14.—N° 2847.

CROCKER, WILLIAM ROBINSON.—"Improvements in cutting corks and bungs, and in apparatus employed therein." The patentee employs three machines but claims the invention of only two of them.

The first is intended to cut cork wood "into strips, the breadth

" of which is equal to the length of the cork or bung to be cut from it." A circular knife revolves through a slot in a table; it is so mounted that its axis "is below the upper surface of the table." A "guide for the edge of the cork wood" is capable of being set nearer to or farther from the knife. A metal plate is let into the upper surface of the table; it is slotted, and the sides of the slot "come as near as may be to the sides" of the knife; the plate "is made slightly rounding at its upper edge so as to cause the upper edges of the cut parts in the cork wood slightly to open out from each other."

The strips "are next cut into a cylindrical form, as described in the specification of Lorenzo Blackstone, dated 5th July 1856, which will produce a large proportion of corks fit for use, whilst the others are by reason of their being imperfect to be subjected to the action of another machine" of the following construction:—A vertical shaft carries a driving pulley and at its upper end a circular knife "held in its place by flanges." On another shaft is mounted gear which "works in another gear," thus giving motion to two spindles. At the extremity of the spindles are heads for holding the corks, and the inner end of one spindle "is turned smaller" than the other portion. A lever is arranged to communicate a "traversing motion" to the last-mentioned spindle. The corks are supplied to the spindles from "a feed-wheel" which has "circular cavities at its circumference for the purpose of holding the cylindrical blocks." The feed-wheel is moved by a ratchet having "as many teeth as there are cavities in the circumference." An iron frame bolted to the main framing can have its ends raised or lowered so as "to give the required taper" to the cork.

In operating one of the spindles "comes in contact with one end" of a cork and "drives it on until its other end comes against the extremity of the other spindle;" the two "then move together" and carry the cork "out of the feed-wheel against the edge" of the revolving knife. When the cut is complete, the spindles carry the finished cork "back into its hole in the feed-wheel and there release it;" the feed-wheel then "moves on a step to bring up another cork."

The various parts of the machines and their action are fully set forth in the specification.

[Printed, 10d. Drawings.]

A.D. 1859, December 28.—N° 2962.

ROSTAING, CHARLES SYLVESTER.—“Improvements in combining and mixing gutta percha with mineral and vegetable substances capable of altering its quality in such a manner as to produce hard, resistant, unalterable, and imputrescible compounds diversely coloured.” The patentee applies his invention to a variety of purposes, and among them “to cork and close hermetically all sorts of bottles containing alcohols, syrups, liqueurs, effervescent or other liquids, all sorts of wines, chemical products, and perfumes.”

The gutta percha is purified by boiling in soft water, flattening into thin sheets, washing in cold water, boiling in a decoction of soap wort, again forming into thin sheets, again washing, and then drying. It is afterwards boiled for several hours in a “lie of soda rendered caustic by lime or a mixture of soda and caustic potash;” it is then flattened again, boiled again in soft water, flattened again, washed in cold water, and dried, when it is fit for admixture with colours.

The “mineral combination” with which the purified gutta percha is mixed for corking, &c. is composed of 40 parts of blende in fine powder, 80 parts of felspar, and 8 parts of soda, dissolved in a very small quantity of water; kaolin in powder may be substituted for felspar. The whole is put into “refractory pots, wherein it is submitted to a strong baking.” The baked compound is reduced to a fine powder, washed in warm water, and dried, when it is ready for mixing with the gutta percha “in variable proportions.” The composition may be rendered “more unalterable” by the addition of catechu.

[Printed, 1s. 4d. Drawings.]

A.D. 1859, December 31.—N° 2999.

RIDSDALE, JAMES.—(*Provisional protection only.*)—“Improvements in the construction of syphons.” The air is exhausted by the employment of a chamber of vulcanized india-rubber or like elastic substance, “terminating in a short length” of a similar substance “open at the end or fitted with a cock.” Or a small pipe may be carried from the longer leg to any desired height, and “an elastic air-tight chamber may be connected” to the top of the pipe.

The shorter leg is to be inserted into the liquid, and the elastic chamber is to be compressed, "taking care to close" the "end of the short tube" or "to shut the cock before releasing the pressure" from the elastic chamber; "the effect of this is to exhaust the air from the syphon, the liquid following as usual."

[Printed, 4d. No Drawings.]

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1860.

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A.D. 1860, January 13.—N<sup>o</sup> 97.

MUSSELWHITE, JOHN.—"Improvements in apparatus for transferring fluids." These improvements "simplify the action of syphons, enable a large quantity and weight of fluid to be drawn over, and render the manipulation with acids safe and cleanly."

In the longer leg is fixed a stop-cock which is connected to an exhausting chamber by a bent arm. The chamber is of vulcanized india-rubber or other suitable material, generally spherical, but in "a syphon of large bore and long length" of "an elongated shape," and containing a helical or other spring. Adjoining the cock is an "air vent diagonal to the syphon vent opening into the tube of the syphon" and into the arm of the cock.

The chamber "being compressed by the hand, the air is forced through the air vent;" the syphon is then placed in the fluid; the chamber is allowed to expand; "the air forced out returns again through the air vent to the chamber;" the fluid is "drawn over," and "on the syphon vent being opened by drawing the arm of the stop-cock forward," runs in a continuous stream.

One figure in the sheet of drawings shows "another form of air vent;" another the arm "as composed of glass with a bulb, by which the coming over of the fluid is indicated."

"A glass syphon" for drawing off acids.—The arm connected to the chamber and made with a bulb opens into the longer leg; for additional strength it is fixed to the leg again above the bulb. Near the lower end of the leg is "a compressible valve" of vulcanized india-rubber or other elastic tubing; on pressing the valve *close* at the time that the chamber is expanding, "the fluid is

"drawn over to the bulb;" the valve is then loosened, "and the fluid runs off."

[Printed, 8d. Drawing.]

A.D. 1860, February 17.—N° 434.

WESTWOOD, EDWARD.—"An improved mode of securing or holding corks in the necks of bottles, jars, or other similar vessels." Horizontal projecting rings or annular corrugations are formed within the upper portion of the neck during manufacture; these allow the cork "to swell or take into the corrugations and thereby secure the contents of the bottle."

The instrument for making the ring is composed of (1) "outer moulding spring clips;" (2) "an inner metallic core" made with rings and capable of being opened and closed by the action of "studs and pivot centres;" (3) a guide bar "secured to the core for directing the action" of the clips and working in slots in the clips; (4) a "stay rod" attached to the bar and retained in position by nuts. The "lever ends" of the core work in recesses formed in the clips.

"The inner corrugations and outer surfaces of the mouths" are made simultaneously "by giving a rotatory movement" to the instrument or the bottle. The instrument is released "by the expansion of the spring clips and consequent contact or closing of the parts composing the core."

[Printed, 10d. Drawing.]

A.D. 1860, February 24.—N° 508.

JOHNSON, JOHN HENRY.—(*A communication from Thomas Rollason Hartell and Andrew K. Hay.*)—"Improvements in forming the fastenings of caps or stoppers for jars and bottles, and in the machinery or apparatus employed therein." This invention "relates to that class of vessels and caps or stoppers for the same, wherein the latter are secured to the former by inclined planes on the one, and projections on the other, fitting beneath such inclines." The desired shape is given to the cap or to the mouth of the vessel "by first forming vertical ribs on the same, and then removing a part of each rib whilst the material operated upon is still plastic."

The mould employed is "divided centrally" and held together "by any suitable contrivance." The die, the lower end of which



" forms the inside of the cap," has a circular recess " concentric " with the exterior," and in the bottom of the recess is fitted a disc attached to or forming part of a spindle, which is held in position by a cross bar on the top of the die. The spindle is turned by a handle to an extent limited by pins which project from the cross bar. On the under side of the disc is a " cam " groove of the form of an equilateral triangle with rounded " corners." Into the groove fits a round projection on one end of three (or more) " radial punches," which " slide in grooves or " slots formed in the bottom of the recess " of the die, and " slide freely in orifices passing through the sides " of the die, each punch having at the outer end a lip, whose lower end " is " flush with the bottom of the die." On the sides of the die, and where each orifice is situated, " is formed a perpendicular " recess."

The process of making the cap is explained in the specification. The vessel to which the cap is to be applied has inclined planes formed upon it near the edge of its mouth ; the cap is put on so that each projection coincides with the space between two inclines, and is then turned round. A ring of india-rubber, or other elastic substance let into the recess formed in the cap, makes a " perfectly air-tight joint."

Sometimes it is necessary " to grind the ends of the projections ;" the " grinding operation " also is described.

The specification contains likewise a modification for making a " larger class of caps," and " the mode of forming projections on " the inside of the mouth of a vessel," the inclines being on the cap.

[Printed, 8d. Drawing.]

A.D. 1860, February 29.—N° 563.

WILSON, GEORGE.—(*Provisional protection only.*)—" Improved " machinery for moulding the caps of bottles and jars." The caps are made of plastic material " with a screw-thread on their inner " periphery." The apparatus employed " consists of a block " fitted on its upper face to receive a removable ring, which in " cross section is a counterpart of the profile form of the cap." The block is " hollow at its centre, and tapped to receive a ver- " tical screw, which forms the core " and " presents the upper " part of its screw-thread " to the material placed in the block.

The plunger, whose rod works in guides, "is shaped on its under side to correspond to the form intended to be given to the top of the cap." At the lower end of the core is applied a handle "for rotating the screw and raising it into and withdrawing it from the mould." The working of the apparatus is described.

"When making coarse ware," a fixed core may be employed, and the ring or profile die "may be formed "of two or more pieces;" in such case "an axial motion must be given to "the cap" to release its moulded thread from the thread of the core.

[Printed, 4d. No Drawings.]

A.D. 1860, April 5.—N<sup>o</sup> 868. (\* \*)

LEUCHARS, WILLIAM.—"Improvements in portable inkholders and match boxes." The object of this invention is to attach to the above a more secure fastening than usual. The patentee substitutes for the ordinary thumb spring a small handle or plate on the lid, which passing through communicates with a spring catch or other mechanical contrivance inside, and, when turned in a circular direction, actuates the catch, thereby unfastening the box. In inkholders, he covers the inner part of the spring movement with flexible material, which forms a pad and prevents the escape of the ink.

[Printed, 4d. No Drawings.]

A.D. 1860, April 18.—N<sup>o</sup> 978.

BYRN, MARCUS LAFAYETTE.—(*Provisional protection only.*)—"An improvement in corkscrews." This invention consists "in combining a gimlet or tapering-pointed screw with a handle, thereby forming an instrument adapted to drawing corks of any size," whether made of cork or hard wood. This "gimlet screw" serves also "for breaking the wire or string by which the cork is often retained in bottles." The inventor adds that the instrument "will enter into a cork much better than the usual twisted steel wire" employed for such purpose; that it is not likely to penetrate the cork "slanting or at one side," and that it is "more easily manufactured, much stronger, more durable, and more convenient" than any corkscrew now in use.

[Printed, 4d. No Drawings.]

A.D. 1860, April 25.—N<sup>o</sup> 1033.

CLAEYS, THEODOOR AUGUSTIN.—“Improved machinery for the manufacture of corks, bungs, and shives.” This invention “comprises four distinct and separate machines;” (1) a “lengths machine” for cutting sheets of corks into strips; (2) “a quartering machine” for subdividing the strips into quarters; (3) “a backing machine” for trimming the quarters “by removing their rough outer parts termed back and belly;” (4) “a rounding machine” for shaping the trimmed quarters into corks, bungs, and shives.

1. This is composed of a framing, a shaft supported on the framing, circular knives fixed on the shaft, and adjustable gauges, (one to each knife) fastened on the framing; it is worked by causing the sheets of cork “to pass singly along one of the afore-said gauges under the action of the knife.”

2. This consists of a framing supporting two shafts, whereon are fixed segmental knives, a corresponding number of adjustable gauges being secured to the framing opposite to each knife; it is worked by putting the lengths against the gauges, “and at each revolution of the knives” a quarter is cut off.

3. This is composed of a framing, a shaft carried by the framing, and circular knives fixed on the shaft, “each pair thereof “being connected to a moveable gauge and a guide roller;” it is worked “by causing the quarters to pass one after the other “along the gauges under the action of the knives.”

4. In this a framing carries “a number of segmental knives, “each carried by a wheel, which also carries three cams,” one of which “is in connection with a quarter carrier,” one “with a lever acting upon a pair of geared spindles,” and one with a lever connected with gearing by which the spindles receive rotatory motion. The knives are caused to rotate; quarters are put into the carriers; these “being released by their respective “cams receive by the traction of counterweights an ascending “motion,” and each carrier carries its quarter “between the “toothed heads of its respective pair of geared spindles.” The quarter is taken hold of at both ends “by the traction of the “counterweight of the lever connected with the geared spindles,” the lever having been released by its cam. The carrier receives from its cam “a descending motion to free itself from the quarter,” and “by a releasing action of the cam in connexion with

"the lever acting upon the gearing" which imparts motion to the spindles, the spindles revolve, and with them the quarter; this is shaped by the knives, and is then released from between the spindle heads by the action of the cam, "which is in connexion with the lever employed to act upon the said spindles." The cork "is conveyed into a receptacle by means of a moveable flap and a conductor, both adapted to the quarter carrier." Next to each of the knife-carrying wheels is another wheel, "the rim of which is faced partly with straight and the remainder thereof with cam surfaces;" each moves between two adjustable guide rollers, which are adjusted to the straight surfaces for cutting round corks, and to the cam surfaces for cutting corks of "an oval shape." Each pair of guide rollers is carried by a moveable bracket, "in order to cause the knife with which it is connected either to advance to or recede from" the spindles. The spindles are hollow, and within each is a rod, "which acting under the pressure of a spring disengages the cork" from the spindle heads. "To each side of each knife is adapted a rotatory whetstone connected with springs and cams."

The patentee describes at great length the arrangement of each part of the machines; he claims also modifications of the number of knives and gauges employed.

[Printed, 2s. Drawings.]

A.D. 1860, May 16.—N° 1204.

CHRYMES, PETER.—(*Provisional protection only.*)—"Improvements in stoppering bottles, jars, and other like vessels." The inventor makes caps of glass, wood, or other suitable material, with one or more spiral grooves inside; the grooves "run out to the lip of the cap or cover in one continuous incline." On the outside of the neck of the vessel he forms one or more studs or projections which enter the spiral grooves; and he tightens the cap on the vessel "by giving it a turn or partial turn by the hand."

[Printed, 4d. No Drawings.]

A.D. 1860, June 28.—N° 1567.

BOSSELAERS, CHARLES.—(*A communication from François Vander-Hagen.*)—"An improved apparatus for corking bottles, jars, and other vessels." The apparatus consists of a tube and

a driver. The tube has a taper or conical bore, the smaller diameter being at the bottom; it may if desired have a lining of metal. The bottom of the tube is recessed to fit the top of the neck of the bottle, so that the hole in the neck may be concentric with the bore; the top is provided with a moveable cover which is bored through the top to form a guide for the driver. A buffer of india-rubber or other elastic material is put round a portion of the driver which is above the cover, and the head of the driver is "of an increased diameter so as to bear a repetition of blows" from a mallet; the elasticity of the buffer prevents "the possibility of breakage" and shows "when the cork has advanced through the tube." The cork should be wetted before it is placed in the tube.

[Printed, 10d. Drawing.]

A.D. 1860, July 12.—N° 1685.

MORDAN, FRANCIS.—"Improvements in bottles, jars, or vessels for holding blacking, and in certain appurtenances thereof, part of the invention being applicable to stoppers for bottles used for other purposes." The bottle is moulded with two projections on one side, the upper one with an aperture through it, the lower one with a step or socket; these are for holding the "dipping or taking-up instrument." This instrument is a shank carrying a screw at top and a pad at bottom. A cylindrical piece of wood having a flange at the lower end extends through the cork; a ring is screwed into its top, and the screw of the instrument into its bottom. Or the screw of the instrument may be screwed into the shank of the ring. The stopper and the instrument are raised together out of the bottle by aid of the ring.

[Printed, 6d. Drawing.]

A.D. 1860, July 13.—N° 1689. (\* \*)

BOQUET, MARIE VIRGINIE.—(*Provisional protection only.*)—"Canisters or vessels fitted with moveable and hermetically-stopping covers for containing preserved alimentary or other substances." This invention consists in an arrangement of cover to close hermetically a canister or vessel containing the above substances without the use of solder or cement. It is proposed to effect this purpose "by means of a collar tightly surrounding and holding fast together the canister and its

"cover." A ring of india-rubber or other similar compressible substance "will interpose between the cover and its collar, which collar will be tightened by a thumb screw."

[Printed, &c. Drawing.]

A.D. 1860, July 16.—N° 1718. (\* \*)

BAIN, ALEXANDER.—(*Provisional protection only.*)—"Improve-ments in means, apparatus, or articles for holding and supplying ink." The object of this invention is to raise a supply of ink without dipping into or exposing the main contents of the inkholder. In one arrangement, the neck and stopper are constructed straight (their contiguous sides being smooth or threaded) and the latter fits so accurately that it works up and down as a piston. Air is admitted by forming a recess either at the side of the stopper at its lower part, or of the neck at its upper part, or by drawing out the stopper. The dipping cup "is sunk in, fitted on, or connected to the stopper," a tube passing into it and descending into the inkholder. In another arrangement, the stopper fits outside or around the neck. "To avoid spirting, entry of air, and premature descent of the supply raised," a washer is interposed between the rims of the stopper and neck, or a pin is passed loosely through the tube, having a washer or disc at each end outside the tube held on by a stud or otherwise; or the upper end of the tube may be closed by a cap perforated at the sides. "The stopper may have a rim projecting outward for convenience of handling, and a rim may project inward over the edge of the cup to avoid spilling."

[Printed, &c. No Drawings.]

A.D. 1860, July 26.—N° 1813.

THOMPSON, JOSEPH.—"An improvement in covers for jugs, also applicable to covers for other articles." This invention relates principally to such jugs, &c. as have hinged covers.

1. "The loose thumb lever arrangement."—An abutment is formed in a piece with the cover or is connected to it; it is jointed to the fixed part of the cover by lugs and a pin. The short arm of a lever has the pin for its fulcrum; the long arm ends in a hump piece of ivory or other non-conducting material; the lever is placed between the lugs. The cover is raised by depressing the long arm; it falls by its own weight.

2. "The detached thumb lever arrangement."—This is "particularly applicable to the covers of claret jugs and decanters." The lever "passes through a slot formed in the fixed part" and "moves on a pin fixed under it." The long arm "is lengthened to suit the position of the handle."

3. "The balance lever arrangement."—An "internal weighted lever" is employed. The cover is opened "by simply inclining forward the mouth of the jug," the upper part of the lever being thereby "brought to bear against and press upon the abutment."

4. "The united thumb and balance lever arrangements combined."—In this both a thumb lever and a balance lever are employed; they are arranged as before described.

[Printed, *ed.* Drawing.]

A.D. 1860, August 4.—N° 1891.

GEDGE, WILLIAM EDWARD.—(*A communication from Barthelemy Belzon.*) — (*Provisional protection only.*) — "An improved cork-cutting machine." The knife "is endless" and is set in motion "by two conical pulleys with nuts which stretch the knife." The pulleys "are fixed to separate wheels set in motion by means of an endless screw which teeth into each." A projection on the wheels keeps the knife in position. Circular motion is given to the cork, "and for this purpose a chariot is used which rises and falls with the framing on which it is placed." By the action of rods and toothed wheels "and the centre of a rod changing during the revolution of a wheel" the chariot rises as the wheel turns, and it is retained in position by catches on the wheel. "If one of the wheels turns more than another, a conical cork will be produced." The chariot is kept against the endless screw during the cutting "by a large wheel and band and small wheels which turn the cork holders." The holders "turn round a moveable metal rod" and "they are to be changed according to the size of the cork required to be made." A small spring presses against the cork during the cutting and is released by "a rod having a small pulley at the end (which presses against another rod pivoting on a centre, and which acts as a lever)." A metal piece "is placed at right angles upon a rod having a collar at each end, which slides along two other rods" forming two sides of a rectangular triangle, "so that the first-mentioned piece as it rises (with the framing carrying the chariot) advances

“ an equal distance, and the sides of the angle are always in such  
“ a position that the knife grazes them; therefore in placing the  
“ cork against the sides of the said piece the tare is removed,  
“ and as much cork as is required is preserved.”

[Printed, 4d. No Drawings.]

A.D. 1860, August 11.—N° 1946. (\* \*)

WILKINS, JOHN.—“ An improved inkstand,” whose component parts are an inkholder of glass or any suitable material, a conical dipping cup, a tube containing the ink which is in use, a flexible tube, a flexible hinge of vulcanized india-rubber, a split metal washer, a collar, and a ball valve. The cup is fastened into the neck of the hinge; over this is pressed the ink tube, to whose end is attached the flexible tube; the whole is placed in the neck of the holder. The remaining part of the hinge is turned down round the neck, and the washer and collar are put on it. When the cup is pressed down the ink will rise from the holder into the tube. To protect the ink perfectly from dust and the atmosphere a ball valve is placed in the ink tube. Various slight modifications may be made in the above arrangement without altering the principle, namely, the application of a flexible hinge.

[Printed, 8d. Drawing.]

A.D. 1860, August 25.—N° 2049.

DE BARAN, FERDINAND GABRIEL MIGEOT.—“ An improved  
“ method of stopping bottles or other vessels for containing  
“ gaseous liquids.” The stopper presents outwardly the appearance of “ a china or other piece.” Inside is a vertical groove “ having at its lower end a larger recess,” in which “ the ascensional  
“ tube is fitted, the upper end being in the interior of the piece;  
“ elbowed, and ending externally in the shape of a spout tube.” The piece is “ traversed horizontally by a larger opening,” which has the form of a cone at the place where it meets and crosses the groove. The conical part is fitted with a cone of india-rubber. The cone is “ traversed by a metallic rod ” which is secured at the base of the cone by a nut. The rod projects beyond the cone; its outer end is connected to a hollow knob, wherein is a spring that “ tends to bring the cone against the sides ” of the conical part. A plug of leather, india-rubber, or cork “ is intended to  
“ insulate said rod and prevent leakage.” On the side opposite the knob is a “ stopper screwed on to a packing; ” this “ closes



“ the apparatus, allowing at the same time of removing the “ internal pieces.” The knob also slides in packing. A circular flange is formed on the lower end of the piece ; it is “ intended “ to keep in the armature which holds the piece firmly ” on the bottle.

When the knob is pressed upon, the spring is depressed ; the rod carrying with it the cone is pushed farther into the horizontal opening ; between the cone and its conical part is formed a space, “ through which the ascending liquid passes round the cone, and “ thence escapes by the spout.”

The modifications of which the foregoing apparatus is susceptible are described by the patentee ; they are so numerous that they fill nearly 33 pages and require upwards of 84 figures in the annexed sheet of drawings. The object sought to be obtained is that the liquids cannot “ come in contact with any metallic parts “ in the said apparatus.”

[Printed, 1s. 8d. Drawing.]

A.D. 1860, August 25.—N° 2054.

CUTCLIFFE, ELIZA, Executrix of HENRY VAUGHAN.—(*A communication from Henry Vaughan.*)—(*Provisional protection not allowed.*)—“ Improvements in machinery for cutting corks and “ bungs.” It is preferred that the machinery should be arranged “ for working with four sets of apparatus for receiving four “ pieces or blanks or squares of cork wood to be cut into four “ corks or bungs by the same rotating knife.”

In order to obtain rotatory motion, “ the axis in each apparatus “ is put into connection or gear with a piston rod, which at the “ proper time is put into motion by the pressure of water which “ is allowed to flow into the cylinder or vessel in which the piston “ works.” Provision is made for allowing the water to flow into the particular cylinder as soon as the square “ has been introduced into the machine and brought into position to be cut by “ the knife which is kept constantly rotating ;” also for shutting off the supply and for running off that which has acted on the piston, when the square has been cut into a cork or bung.

[Printed, 4d. No Drawings.]

A.D. 1860, September 3.—N° 2121.

FORGIE, WILLIAM, and FINN, THOMAS.—“ Improvements in “ the construction of apparatus for the preservation of life from

“drowning, and in the preparation of the material employed for this purpose, and for rendering articles buoyant in water.” The part of this invention which belongs to the present series consists in grinding or rasping cork or cork shavings “so as to convert it into sawdust or powder.”

The machine employed is composed of (1) a roller “with a rough or serrated surface” and turning in bearings on a frame; (2) a feed roller in gear with the other by means of a band and pulleys; (3) two inclined boards and a reception chamber.

The cork “previously rendered perfectly dry” is placed on an inclined board in front of the feed roller; motion is communicated to the rollers by means of a crank handle or other motive power; the cork passes under the feed roller, is ground by the serrated roller, and descends down an incline into the chamber, “which is furnished with a sliding door to discharge the contents as required.”

The cork may be ground “by passing the same between suitable grinding surfaces or between rollers rotating at different velocities.”

[Printed, 1s. 4d. Drawings.]

A.D. 1860, September 18.—N<sup>o</sup> 2268.

CULLIS, WILLIAM.—(*Provisional protection only.*)—“Improvements in stoppering or closing bottles, jars, and other like vessels.” Upon the neck of the vessel “an obtuse angle screw thread is to be cast or formed continuing once or more times around, and by preference of an increasing diameter from the mouth downwards.” A corresponding screw thread is formed on the inside of a capsule of gutta percha or other suitable material. The top of the capsule on the inside is provided with a block of cork or the like. The vessel will be hermetically closed by screwing the capsule tight down on the neck.

[Printed, 4d. No Drawings.]

A.D. 1860, October 1.—N<sup>o</sup> 2370.

HURST, CHARLES HENRY, HORSEY, HENRY, and BAKER, GEORGE.—“Improvements in syphon and other taps or cocks employed for drawing off liquids.”

1. Siphon taps :—"The shell of the tap" is furnished with a siphon tube and a passage communicating with the tube "for admitting atmospheric air thereinto." The novelty consists in making the tube "inclined and to within a short distance of the bottom of the outlet opening" of the tap, so that "the liquid is thus directed into the vessel intended to receive it." In taps for bottling off liquids a screw thread is formed "about the bottom part of the outlet opening" and thereto is fitted a nozzle with one or more grooves "formed therein to admit air whilst bottling off."

2. "Safety lock taps :"—A screwed socket is "cast with or fixed to the shell of the tap." The point of the screw which enters the socket "is intended to take into a hole formed in the plug of the tap" by applying to the square head of the screw a part of the ordinary key shaped accordingly.

3. An improvement applicable to all kinds of taps :—A strap of iron or steel is placed in the mould in which the tap is to be cast, and the molten metal is run round it, or it may be soldered or screwed to the tap; it is connected to the front or nose of the tap by a steel screw "formed with a large head;" or the screw "may be cast with the tap." This screw is intended to protect the tap from injury "when struck with a hammer in the act of tapping."

[Printed, 8d. Drawing.]

A.D. 1860, October 26.—N° 2614. (\* \*)

TIERNAN, ROBERT.—(*Provisional protection only.*)—"Improvements applicable to infants' and invalids' feeding bottles, and other purposes." These consist "in applying to suction tubes or their equivalent, used to draw liquid food from the reservoir or supply vessel, a lift valve or valves, or other mechanical equivalent, to prevent the food returning into the vessel from which it is being drawn." "It is preferred to use the artificial nipples formed of india-rubber, and perforated by what are termed leech bite holes."

[Printed, 4d. No Drawings.]

A.D. 1860, November 6.—N° 2730.

WILSON, GEORGE.—"An improved construction of stoppered bottle." This invention is especially applicable to bottles

"intended to contain strong or poisonous medicines." The bottle may be of any shape, but for holding poisons it is preferred to make it of "the form now so generally approved, viz., the conical octagon." The neck is made (in the act of blowing) with two spouts opposite each other and of different dimensions; the liquid is discharged from the smaller in drops, and from the larger in a continuous stream. A glass stopper is fitted air-tight into the neck; it is grooved or channeled on opposite sides of its periphery, but by preference a portion of the periphery is ground flat, and a groove is cut on the side opposite. Neither channel extends the whole length of the stopper; the flat portion "terminates short of the shoulder of the stopper," and the groove "short of the bottom." In order to give the liquid access to the groove, a recess is moulded in the neck below the smaller spout.

[Printed, 6d. Drawing.]

A.D. 1860, November 20.—N° 2842.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Louis Alexandre Farjon.*)—"Improvements in stoppers for bottles, jars, and other like articles, parts of which are applicable as "fastenings." The stopper is composed of two parts, the lower of which "is capable of being drawn within the upper." An india-rubber ring surrounds the lower part; it is held between the bottom of the upper part and a flange on the lower end of the lower part, where it is retained by a disc. The two parts are connected by a threaded spindle, which is fixed to the bottom of the lower part and takes into a threaded socket in the upper part. The socket has fitted to its top either a button or a key.

By turning the socket in one direction the ring "is compressed longitudinally and expanded against the sides of the neck of the bottle."

[Printed, 8d. Drawing.]

A.D. 1860, December 8.—N° 3014.

JOHNSON, JOHN HENRY.—(*A communication from Jules Mathieu.*)—"Improvements in apparatus for applying capsules to "bottles." The apparatus is carried by two standards fixed on a bed. One end of a metal frame is supported on the left standard, and the other is secured to the right one. The frame carries a

sliding frame, one end of which passes through the right standard. This end is connected by links or chains with segments on a rocking shaft, whose handle is "worked by the knee of the operator." A carriage for the bottle is fitted to the sliding frame; it may be fixed upon the frame in different positions by inserting a holding pin into one of several holes made in the frame; and "a stop or gauge adjustable laterally on the end of the carriage" centres the bottle upon it.

A metal disc is secured to the face of a "rotating box or chamber" which is fitted into the head of the right standard. The disc has an opening in the middle "leading to the interior of the box," and a disc is pressed against the opening by a coiled spring. Three cords, passing over guide pulleys, pass through holes in the rotating disc; one end is secured there, the other to studs or pins in a "vertical sliding frame." This frame "carries the lower portion of a telescopic spring box"; this portion "slides freely within the upper and stationary part," which is secured to the head of the right standard. The spring inside this box "serves to maintain the three cords in a proper state of tension."

The metal disc is partially rotated by means of a handle secured thereto; this motion causes the capsule (which is placed on the bottle-neck before the bottle is moved up) to be "effectually squeezed or nipped round the neck" by the cords, whilst "the bottle is rotated by hand." The disc inside the box presses against the capsule and keeps it in place on the neck, "when the same is made to enter the box by the forward motion of its carriage."

[Printed, 8d. Drawing.]

A.D. 1860, December 10.—N<sup>o</sup> 3031.

NEWTON, WILLIAM EDWARD. — (*A communication from Alexander Millar.*)—"Improvements in machinery for 'quartering' cork wood, and for cutting the 'quarters' into bottle corks."

1. The machinery for quartering:—A horizontal slide rest is supported by "the two upper ends of the upright sides" of "a quadrilateral framework." A sliding carriage "receives an alternate reciprocating motion on the slide rest" from a bell crank through a connecting rod which can be shortened or lengthened. "On the top and on each side" of the carriage "is

"a bearing box" for a rock shaft, which "passes transversely over the carriage" and carries at one end a semicircular knife and on the other "a sector spur wheel." The teeth of this wheel engage with the teeth of a rack bar which is parallel with the slide rest and below it.

Under the knife is a table, behind which is a parallel bar adjustable to form a gauge. "A perpendicular bar" passes down from the middle of the table and through two horizontal bars which keep it "in a steady vertical position." Pieces project from the table and rest on the upper horizontal bar; guide arms project from the ends "and are notched to fit the edges of the uprights." The table receives a vertical movement from the carriage through a lever, whose lower end is connected by a rod "to two pair of toggle levers," which are pinjoined to the lower horizontal bar and to the perpendicular bar.

On the end of the frame opposite to the lever an arm is pivoted; its upper end projects above the slide rest sufficiently high to be struck by the carriage or by a piece that projects from one end of the carriage; this arm is connected to the lever by a horizontal rod. A similar piece projecting from the other end of the carriage strikes the upper end of the lever; both pieces are adjustable as to length, and by their striking the table is raised or lowered. The force of the blow against the lever is diminished by a socket (containing a spring pin) which passes through an eye formed in the upper end of the lever.

2. The machinery for cutting the quarters into corks:—"A horizontal sliding knife-frame" is arranged within "a rectangular frame"; it works in guides "in a horizontal frame-work," which "projects from the back and above the top of the frame" and "extends from end to end" thereof. Four brackets "adjustable up or down" are secured to the inside of the knife-frame; between them knife-heads are fastened by set screws to "fixed horizontal rods." Two knives ("straight flat plates of the best steel, with straight edges, excepting one corner of the cutting edge of each knife which is slightly curved off to commence the cut") are secured "to the plane faces of these adjustable knife-heads"; one knife is situated so as "to take off the corners" of the square, the other "to finish the cork"; they can be "adjusted to a nicety." The knife-frame is acted upon by a jointed connecting rod, an arm, and a rock shaft which receives its motion from the main rotating shaft through arms and a connect-

ing rod; its movement is equalized by a cord ("attached to "the forward end") which passes over a pulley and carries a weight.

On the table or top of the frame is an adjustable bed-plate which "moves between two parallel transverse guide pieces," and on this plate "is pivoted at one end an adjustable bed-plate" which "carries the mechanism for embracing and holding the "quarters while they are cut." This mechanism consist of a "revolving spring arbor" with "a serrated surface secured to "one end," and "a semicircular hub " opposite it; the rear end of the arbor "bears against a point, behind which is a spring enclosed "within a hollow case," thereby allowing the arbor "to be moved "slightly back endwise" to release the cork, and throwing it forward to embrace a fresh quarter. The arbor "receives its end "play" and its rotating movement from mechanism connected "with the sliding frame and the upper bed-plate; the mechanism is very fully explained in the specification.

"Near the front or right-hand end of the frame," and "mounted "on top" of the horizontal framework is the carrier which "carries the quarters placed into it by hand up to the quarter "holders." "This feeding mechanism is so adjustable that it can "be made to operate in harmony with the forward end motion of "the arbor" at any angle to which the arbor may be set; it is composed of "extension arms, an adjustable stem or post and "tube, a quarter or block carrier arm and an adjustable pivoted "arm," and a pulley wheel with a weighted cord, in "combination with a cam on the knife-frame." The mechanism, "which grasps and carries the quarters up to the hubs "and leaves them there, consists of "two fingers," one of which is "simply a spring plate"; they are made "vertically adjustable "on the end of a horizontal arm."

The specification contains a description of the arrangement of all the parts and the operation of each machine.

[Printed, 1s. Drawings.]

A.D. 1860, December 14.—N<sup>o</sup> 3079.

NEWTON, WILLIAM EDWARD. — (*A communication from Alexander Millar.*)—"Improved machinery for cutting and rounding corks and bungs."

The object of this invention is "to cut from square quarters the "common pot corks, bungs," and "all kinds of corks and bungs

" which cannot be practically made in machines for cutting bottle corks."

The main driving pulley is mounted on a " transverse driving shaft "; a belt transmits motion to a " pulley shaft ;" and a belt round the latter pulley transmits rotary motion to a " belt wheel " keyed to the upper portion of a vertical hollow spindle to which a " cutter stock " is secured. The spindle has its bearings in a " large head block " which projects " from the front end of the frame ;" it rotates, but is not allowed " any vertical play ;" its lower end screws into the upper end of the cutter stock. The cutter stock is hollow and " somewhat larger in diameter than the spindle "; it is made with a " bell-shaped mouth " at its lower end. A slot extends nearly the whole length of the cutter stock ; it admits a " tapering block," which moves up and down, but without " any lateral movement." A rod (with a holder attached to its lower end by a screw) passes through the spindle, the cutter block, and the tapering block, and a shoulder on it " leans on the top and smaller end " of the tapering block ; its upper end projects from the top of the spindle for the reception of a collar " which has notches cut in each side." The notches " receive the forked end of a pressure arm," which extends horizontally back and " is pivoted at its rear end to the top of the frame." This arm is acted upon by the downward pressure of a helical spring.

On each side of the tapering block is a knife ; " their inside surfaces are held snugly and securely against the block " by springs ; " the knife bars " have teeth cut on their outside surfaces ; the teeth " are pitched upwards," and the lower ends of the springs take into them. From the upper ends of the springs lips project which bear against the upper end of the stock in grooves, and the action of the springs is regulated by adjusting screws.

The table is secured to the top of a vertical bar " which plays up and down " in bearing blocks. Two collars (with set screws) are placed on the bar, one above, the other below the lower bearing block. A ring is fixed to the bar above the upper collar ; two short arms are jointed at their ends to the ring and to the forked end of a lever which " projects towards the rear part of the frame "; the rear end of the lever is connected to a treadle whose front end " is hung by a helical spring."

The reason of the foregoing arrangements and " the operation of the entire machine," are given in the specification.

[Printed, 8d. Drawing.]



A.D. 1860, December 21.—N° 3135.

PRICE, WILLIAM.—(*Provisional protection only.*)—"Improve-  
ments in the manufacture of articles called shives, tits, bungs,  
"and corks, or other conical bodies, whether made out of wood,  
"cork, or any other substance."

The claim made by the inventor is cutting out and coning the  
above named articles "by one and the same operation."

The machine employed consists of a series of saws or cutters  
"either formed with or else attached or fitted to" a mandrel;  
the saws or cutters are so constructed and arranged as, when made  
to revolve, "to give a slope, inclination, or varying diameter, to  
"the body acted upon." The machine "has attached to or fitted  
"into it a spring, rod, or weight for throwing out such articles  
"when cut or made." The material is to be cut into quarters  
"of the width and thickness required" before it is submitted to  
the action of the machine.

[Printed, 4d. No Drawings.]

A.D. 1860, December 22.—N° 3145.

JOHNSTON, JAMES.—(*Provisional protection only.*)—"Im-  
"provements in apparatus for withdrawing corks from bottles."  
The apparatus may be made in various ways.

1. A screw works "through a nut fixed in the upper part" of  
a frame which fits on to the neck of the bottle, but has slots or  
grooves "to allow of the corkscrew passing up inside it." There  
is "a hook or other connection "on a swivel at the lower end of  
"the screw to take hold of the handle of the corkscrew for the  
"purpose of withdrawing it from the neck." There is also "a  
"large nut or screw collar with handles to it, working on a screw  
"thread outside the cylinder or framework, which is provided  
"with slits for the handle of the corkscrew to project through on  
"each side."

2. "An axis or barrel of small diameter," having a handle on  
its end and mounted on a cylinder or frame, has attached to it a  
strap or chain, so that on turning the axis the strap may be wound  
up. The strap has "a hook or other suitable attachment at its  
"end capable of taking hold of the corkscrew."

3. An axis has fixed on its middle a pinion and on its end a  
handle, so that a rack in gear with the pinion may be drawn up by  
turning the axis. The axis is mounted on the top of a cylinder

or frame, and the rack is on the stem of the worm. There may be two pinions and two racks.

4. There may be an axis and a pinion and a "handle or handles" mounted on the upper part of the corkscrew itself." The rack may be "fixed inside the cylinder or framework." In this construction also there may be two axes, pinions, handles, and racks.

[Printed, 4d. No Drawings.]

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1861.

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A.D. 1861, January 12.—Nº 96. (\* \*)

BOQUET, MARIE VIRGINIE.—(*Provisional protection only.*)—  
"An improved mode of stoppering or closing canisters, bottles, or other vessels." "It is preferable to use vessels of a cylindrical, oval, or other curvilinear shape." "Towards the upper part, neck, or mouth of the vessel the outside of it is provided round its periphery with a rim or flange formed thereon by embossing, rolling, or other suitable means, or soldered, brazed, or solidly fixed thereto in any other suitable manner." The cover or lid is "provided at the lower part with a similar flange or rim corresponding with that of the vessel, so that on applying this lid on the top of the vessel both flanges will accurately fit on each other, or part of the body of the vessel may be made to protrude or enter into the concavity of the lid, or this lid may form a sort of stopper, entering partly and fitting into the neck or mouth of the vessel, while its flange is applied on that of the vessel, or if required any suitable cement or other suitable adhesive matter, or even a washer of india-rubber, greased leather, or other suitable yielding material may be interposed between the two flanges, or these latter may have their surfaces provided with proper protruding and corresponding hollow parts to fit into each other." A ring of india-rubber, soft greased leather, or other suitable material, is then applied over the periphery of the said flanges, and finally a band or hoop of suitable metal, by preference "hollowed out in the shape of a gutter is applied over the ring of india-rubber, both ends of which band or hoop

“ are held together by a screw or other suitable means, so that  
 “ the band may be tightened on the elastic ring.”

[Printed, 4d. No Drawings.]

A.D. 1861, January 19.—N<sup>o</sup> 155.

HENRY, MICHAEL. — (*A communication from Paul Alexis Adolphe Dalberty.*)—“Improvements in machines for manufacturing corks, bungs, spiles, and such like articles.”

1. A machine called “the cutting out or revolving cutter machine intended for cutting the cork into blanks :”—The framework supports (1) three rollers between which is placed the “slab of cork ;” (2) a shaft carrying a number of circular cutters ; (3) a shaft parallel to the other, having “a screw thread formed “on its surface from end to end ;” (4) a nut (on the screw shaft) which by the shaft being rotated in opposite directions is caused to move to and fro thereon ; (5) an axle connected to the nut by arms and links and carrying a number of circular cutters at right angles to the other ones ; (6) a pinion at each end of the axle gearing into a rack ; (7) a table “formed of a series of steel bars “or plates and receiving the cork after it has been cut” by the first set of cutters ; (8) pulleys and bands suitably arranged for rotating the rollers and shafts.

The cork is cut into lengths by the first set of cutters ; the rollers and the cutters are stopped by disconnecting certain pulleys ; the cork passes on to the table, and the axle and its cutters being set in motion, the lengths are cut into quarters.

2. A machine called “the adjustable cutter machine intended “for cutting corks, bungs, spiles, and like articles of cylindrical or “conical shape :”—A moveable rack passes through a frame ; to it is attached a nut “travelling to and fro on an endless screw” which is turned by a wheel. The rack “is in gear with ten (more or less) pinions,” which are placed alternately higher and lower “to save space.” Under each pinion axle and opposite to it is a spindle pivoted at bottom so as to be capable of revolving and terminating at top in a head “shaped like the frustum of a cone.” Upon the wheel is a rod which communicates to a frame an up-and-down motion at each revolution of the wheel. The frame carries the cutters, each being “a blade with a cutting edge on “each side, that is to say, each blade “has a toothed or serrated “cutting edge on one side, and a plain cutting edge on the

“ other;” the former is used for cork, the latter for wood. The frame slides in standards which “ may be set at any desired angle “ or inclination ” by means of regulating screws. The quarters are placed on the spindle heads, and are pressed firmly up against the bottoms of the corresponding axles by means of a treadle “ working a rod taking into a rack or toothed catch-plate.”

3. A machine called “ the tubular cutting machine particularly “ intended for the production of cylindrical corks ” and “ capable “ of cutting out 120 corks or bungs ” at one operation :—Frame-work supports two platforms connected by pillars, and on the lower one a revolving shaft is mounted on plummer blocks. The shaft carries two bevel pinions in gear one at a time with a horizontal wheel to which they impart motion in opposite directions. This wheel is mounted on a shaft which is supported in a bracket and “ cross frame bar.” On the shaft is a toothed wheel in gear with four toothed wheels on shafts parallel to the said shaft. The shaft carries also a toothed pinion, and each of the other shafts a similar pinion ; each of these pinions “ is in gear with four toothed “ pinions,” each one of which “ drives a series, row, or train of “ five other toothed pinions ;” thus each pinion “ really actuates “ a group of twenty-four other pinions.” The direction of rotation depends on which of the bevel pinions is put into gear with the horizontal wheel. Each pinion is mounted on a threaded axle “ and is itself correspondingly threaded on the inside,” and “ to “ the underpart of each ” is fixed a tube “ of thin tempered steel “ with a cutting edge.” At the bottom of each cutter is a plug “ which prevents the cutters from getting out of register and from “ tearing or clipping into the cork unevenly ;” it also “ keeps the “ cork down after it has been cut.” A perforated plate guides the cutters “ in their up-and-down travel.”

A beam (or weighted arms) has fixed to it a screw working in a nut in the framework ; the screw is “ attached to the plate that “ carries the cutters,” so that by turning it “ all the pinions and “ cutters may be raised together.” On the revolving shaft is a catch “ which takes into the teeth of a double rack,” causing the rack “ to move one tooth at every revolution ” of the driving pulley ; when the rack has been thus propelled as far as it will “ go,” it comes into contact with a piece and works a clutch so as to cause it to throw one bevel pinion into gear with the horizontal wheel, and the other out of gear with it.

The cork is placed on the upper platform ; it is shifted between each stroke by means of screws.

The patentee does not limit himself to the number of cutters.

[Printed, 1s. Drawing.]

A.D. 1861, February 9.—N° 334.

JENNINGS, JOSIAH GEORGE.—“Improvements in capsules or “ covers for the necks or ends of jars, bottles, and other vessels, “ and hollow tubes or bodies.” These capsules are made of tinned iron and vulcanized india-rubber. Sheets of the metal are cut into discs, and these are pulled through a fly-press, thereby raising “an edge about  $\frac{1}{8}$ th of an inch diameter all round.” The discs are then dished and stamped with any suitable device. A piece of india-rubber tubing (the exterior diameter “being the “ same as the inside diameter of the raised edge”) is placed in the disc, “and the outer edge is closed over so far as may be safely “ done at one operation of the press ;” after this “the outer edge “ of tinned iron ” is closed down upon the rubber.

In applying the capsule, the tubing is “turned back ;” the metal top is placed on the vessel ; and the tubing is then turned down on the neck or side.

Sometimes the patentee puts into the disc “a ring of tinned “ iron ” along with the tubing.

Sometimes he cuts out a piece from the middle of the disc and replaces it with a piece of glass or other transparent material.

Sometimes he lines the capsule with gutta percha, sheet lead, “or other acid-proof material.”

Some capsules are made with “a raised top ” so that “a cork “ may go up into it.”

If very large capsules are required, he makes “a groove on the “ edge of the metallic shell ” and wires or ties on the tubing.

[Printed, 8d. Drawing.]

A.D. 1861, February 12.—N° 352.

FRANKENSTEIN, NATHAN.—(*A communication from Henri Cazades.*)—(*Provisional protection only.*)—“Improvements in “ syphons for drawing off liquids from casks and other vessels.” At the upper part of the bend is a valve for the escape of air while the siphon is being filled with liquid. A pump is fixed (by preference in the interior) on the shorter limb, “and the piston

"rod is arranged to work through the upper end of the barrel of the pump and near the upper part of the shorter limb." At the lower part of the barrel there is a valve (by preference spherical) "which opens inwards," and above the valve "a rising pipe which ascends within the shorter limb." At the other end of the pipe is a valve "which opens outwards."

In using the siphon, the cock near the lower end of the longer limb is to be closed; the air valve is to be opened; the lower end of the shorter limb is to be inserted into the liquid; the piston is to be worked; the liquid will be raised; the siphon will be "progressively filled with liquid, and the air previously contained in the siphon will pass out at the air valve. When the siphon is full, the air valve is to be shut, and the cock is to be opened, when the syphon will act without the further use of the pump."

[Printed, 4d. No Drawings.]

A.D. 1861, February 22.—N<sup>o</sup> 439.

LANG, BENOIT.—"Improvements in apparatus for feeding infants and invalids." This invention is intended to remedy the evil "of continually exhausting the air and sucking up the liquid" in ordinary feeding bottles.

A valve is placed in the tube to which the teat is attached, so that when the teat and tube are once filled, the liquid is retained therein and "cannot run back down the tube into the bottle or vessel" while "the infant respire or ceases to suck."

The valve may be of any suitable substance, size, and form; it may be placed in any convenient part of the tube, or at the base of the tube, or in the teat. There may be more than one valve if required.

[Printed, 4d. No Drawings.]

A.D. 1861, March 13.—N<sup>o</sup> 621.

SAULAY, OCTAVE.—(*Provisional protection only.*)—"Improvements in stopping or closing bottles, vases, cans, and similar articles, whether of glass, metal, or other material." A groove is formed "within the top of the neck;" upon the groove is placed a washer of skin, caoutchouc, or other suitable substance; upon the washer rests "the border of a metal or glass cover;" and over the cover is placed "a pressure bar, which drops into a hollow in the centre of the said cover." The bar forms at its extremities

hooks, "which enter two notches in the thinnest part of the neck;" and when it is turned, "it presses upon the strongest part of the bottle until it drops into the groove or cavity in the cover and completes the stopping."

Another improvement consists "in strengthening the neck of a bottle or vase, and forming two lugs thereupon," and closing the bottle as follows :—Put an india-rubber or other washer across the top, then a cover of glass or metal (its border resting on the washer), then a spring or a spring bar on the cover, and over all "a cap with vertical and helicoidal groove, into which enter the lugs on the neck." The stopping is completed by turning the cap.

Or "the top of the neck may have an exterior or an interior cone, into which the cover will take and be fixed with wax or in preference plaster, and with or without the pressure bar." Or "a double pressure stopping" may be obtained by "using the interior or exterior cone and cover, and a washer, cover, and bar above."

[Printed, 4d. No Drawings.]

A.D. 1861, March 19.—N<sup>o</sup> 692.

WILSON, GEORGE.—"Improvements in glass stoppers, applicable to feeding bottles, retorts, and other vessels." The stopper is hollow and so constructed that "without removal from its seat" it provides a passage for the withdrawal of the contents of the vessel, and "by receiving a slight axial movement in its seat" it effectually closes that passage.

Feeding bottles :—The bottle is made with an "internal recess" on opposite sides of the neck. The stopper is blown with a closed bottom, an open top suitably shaped to receive an artificial teat, and a round hollow projection on one side near the bottom. In the act of grinding the stopper to fit its seat in the neck the glass forming the projection is removed, thereby making a hole in the side, "which communicates with the central passage" of the stopper. On the side opposite the hole "a longitudinal cut" is made for the admission of air. When the hole and one recess coincide "a discharge passage will be opened up," and air will be admitted by the coincidence of the cut and the opposite recess." "A knob or other indication is made on the stopper to enable the nurse to adjust the filled bottle for use in the dark." A slight turn of the stopper closes both passages.

Retorts and vessels which do not require the access of air :—The stopper is not channeled; it has merely the lateral hole. The upper portion must be “suitably shaped to receive a coupling pipe or other attachment for leading off the gaseous body generated.”

[Printed, 6d. Drawing.]

A.D. 1861, May 4.—N° 1126.

PALMER, WILLIAM.—(*Provisional protection only.*)—“Improve-ments in apparatus for facilitating the imbibing of liquids.” The inventor proposes to adapt to any convenient vessel for liquids a suction tube “provided with a suitable mouth-piece and stop-cock,” and if desirable with “a strainer or suitable filtering medium.” The tube is to pass through the stopper or cap (according to the vessel used) into the liquid, “provision being made for the free admission of air.”

[Printed, 4d. No Drawings.]

A.D. 1861, May 8.—N° 1162.

NICHOLLS, HENRY MARTYN.—“An improved instrument for withdrawing corks from bottles when acting as stoppers therein.” The worm is fixed in a short cylinder which has a screwthread formed on its circumference. This cylinder is surrounded by a longer one which has a corresponding screwthread on its internal circumference. A mouthpiece is so attached to the lower part of the longer cylinder by a collar “that it can be made to turn round it.” The short cylinder has a groove on each side to allow of a “thin piece of metal” passing through it. This piece “is made to fit the interior” of the longer cylinder, and is attached at its extremities to the mouthpiece; its extremities are formed with projections which prevent the short cylinder from “being screwed out” of the longer one. The handle is fixed to a shank that rises from the top of the longer cylinder. In this arrangement the screwthreads on the cylinders run “in the reverse direction to the thread” of the worm.

Modification in which the threads on the cylinders run “in the same direction” as that of the worm :—The mouthpiece forms part of the longer cylinder. The extremities of the metal piece are not attached to the mouthpiece. Where the piece “passes across the top” of the longer cylinder, the handle-shank is



fixed into it. The worm "is held rigidly in the short cylinder" while it is being screwed into the cork, "but is free to turn in it while the cork is being withdrawn;" this can be effected "by means of a clutch or any similar mechanism."

"The mode of operation" of each arrangement is described.

[Printed, 8d. Drawing.]

A.D. 1861, May 13.—N° 1211.

CLARK, WILLIAM.—(*A communication from Edmond Armand Louis D'Argy and Joseph Jean Pierre Leonce de Chalret-du Rieu.*)—(*Provisional protection only.*)—"Improvements in corking or stoppering bottles." The stopper is "a cylindrical or slightly conical plug of white wood or cork having a cylindrical or slightly conical hole through the centre." The plug is forced into the neck of the bottle, and the hole is then closed "by a small plug of white wood or otherwise" and sealed if required. The stoppering is "hermetical by reason of the elasticity of the hollow plug, which adapts itself to the form of the interior of the bottle."

The stopper is made sometimes with "a projecting rim resting on the lip of the bottle neck," and sometimes with "a circular groove extending partly round." It is drawn out of the bottle "by means of peculiar shaped nippers, one arrangement of which has an end similar to an extinguisher in form, in two parts jointed together, while the other end has projecting ribs formed on it." The methods of using the nippers are explained in the specification.

[Printed, 4d. No Drawings.]

A.D. 1861, June 13.—N° 1516.

CHATONET, ETIENNE.—(*Provisional protection only.*)—"An improved machine or apparatus for manufacturing the covers of tin or other metal cases." Two cast-iron puppets united by a socle are supported on a block of wood. A revolving shaft mounted on the puppets carries at one end a pinion held in position by a screw, and at the other a roller of cast steel "representing in relief the moulding intended for the covering of the boxes." Immediately below this shaft another shaft revolves in bearings on the puppets; "the upper bearings are moveable" by means of press screws, "allowing space for a conical gearing

“ wheel at one end, the other being furnished with a mill or roller “ in cast steel.” This disposition of the rollers “ allows them “ to approach and retire at the will of the operator,” and a band of metal “ will be forcibly moulded and thinned in one or “ more revolutions of the apparatus.” The screw, which advances the upper to the lower shaft and withdraws it, “ carries a sector “ or rack, which gears into a small pinion placed in the centre of “ a dial,” and an index “ indicates with mathematical precision “ the degree of thinness ” to which the metal is to be brought.

[Printed, 4d. No Drawings.]

A.D. 1861, June 13.—N° 1525.

**DOWNING, THOMAS MARSHALL.**—“ Improvements in the “ manufacture of corks and bungs.” 1. A machine “ for rounding “ and cutting off the corks from what are technically called “ lengths:”—A table for the length to rest on stands at one end of the bed of the machine. The length is pushed in “ between “ the V grooved peripheries ” of two adjustable feed rollers and thence through a hollow plate “ so divided that springs may be “ applied therein to exert their force ” on the top portion, while the lower portion can be adjusted by a set screw. The length is held firmly between the portions and presented to the operation of a revolving hollow cutter; it passes through the cutter and the shaft on which the cutter is mounted, and thence through a delivery tube “ shouldered and fitted ” so that it is stationary. At the mouth of this tube is an “ eccentric segmental knife ” by which the cork is “ cut up into given lengths.” The means employed for connecting the parts and setting them in motion are given, also a modification of the cutter. The lengths cut off are varied by expanding or contracting the feed rollers by adjusting the guide plate, by altering the size of the cutter and delivery tube, and by adjusting the speed of the segmental knife.

2. A machine “ for the making of finished corks from lengths:”—“ A hollow cylindrical or flat circular knife ” is mounted upon the end of a spindle “ revolving in a suitable carriage fixed in a “ slide at right angles with the axis.” The slide “ is mounted “ upon a revolving disc fixed upon a hollow shaft, the axis of “ the before-mentioned spindle standing at right angles with the “ axis of the hollow shaft.” “ A non-revolving face pin-wheel ” encircles the disc, and “ into this gears another smaller face pin-

" wheel keyed on the extreme end of the knife-spindle." " A non-revolving guide is placed within the hollow axis and projecting towards the knife in close proximity to it." At the opposite end of the guide is an eccentric segmental knife. The length is introduced as before described, "and is rounded and finished as it issues from the guide by the revolving hollow cylindrical knife revolving around it." Taper corks are produced "by causing the carriage to slowly reciprocate in the slide."

3. A machine "for rounding quarters or imperfect corks."—The principal parts are (1) a main driving shaft mounted on a cast-iron stand and carrying a fast and a loose pulley at its outer end; (2) "in the centre of the machine a traversing bed working in slides;" (3) a vertical shaft supported on the bed and fitted with a collar at the top; (4) "a circular crown knife" borne on a disc on the collar; (5) two pairs of spindles, one pair on opposite sides of the knife, having toothed heads for holding the quarters. The mechanism which connects these parts and communicates motion to them is very fully described. For tapering corks certain screws are turned, whereby the carriages which support the spindles "may be placed slightly oblique." The manner of supplying quarters to this machine "forms an important feature" of the invention:—A cam on the main shaft operates on the lower end of a rod connected to a lever. "The end of this lever is connected to a coupling secured in their outer ends to two oblong tubes;" the construction of the coupling is explained. The bottom of the tubes is closed, "but the part opposite the ends of the quarters is cut away to allow the holder to come in contact with the ends of the said quarters, as is also the side next the knife, to allow the tube to retire, leaving the quarter between the holders." The working of this arrangement is described. The tubes are fed by the attendant.

4. "A mechanical arrangement for smoothing, finishing, pressing, and embossing" corks by the application of heat:—"A steam wheel" is employed "having a rim that is oblong in cross section and cast hollow." Two parallel passages unite the rim to a centre chamber, "at each end of which is a hollow gudgeon upon which the wheel turns, and through one of which the steam enters," passing up one passage round the rim, down the other passage, and out through the other gudgeon. A number of metal moulds "pass through the hollow rim parallel

" with the said axis, being firmly secured steam-tight in the " metal sides, each end of the mould being open ;" there may be several circles of moulds. On each side of the wheel is a revolving shaft " at right angles to its axis," and two cams on each shaft urge forward a crosshead " moving in guides parallel with the " axis of the wheel." In the crossheads are studs corresponding with the moulds; each upper stud " carries before it a rough " rounded cork from the bottom of an oblong tube, similar to " that described in the last machine, but being cut away so as to " allow the bottom cork to be pushed out endways." The bottom studs each force out a cork " that has remained in the mould during " the time occupied by the steam wheel in making one revolution, " less two moulds, more or less." The mechanism required for working this machine is described at length.

[Printed, 2s. 2d. Drawings.]

A.D. 1861, July 1.—N<sup>o</sup> 1671.

JOHNSON, JOHN HENRY.—(*A communication from Auguste Mondollot, and Jean Alphonse Mondollot.*)—" Improvements in " apparatus for manufacturing and bottling aerated liquids." The bottling apparatus " may be of two kinds," one for " the " filling or bottling of the ' syphons ' or receptacles for the aerated " liquid," the other for " the filling or bottling and corking of " ordinary bottles." Either apparatus is connected to the one for the manufacture of the liquid by a flexible tube, which is provided with a two-way cock, one passage being for the escape of " the excess of fixed air " through a pipe.

1. The other passage of the cock communicates " directly with " the neck of the syphon," which " is previously reversed " and mounted upon a socket " of a shape corresponding to the form " of the neck." The other part of the syphon is supported by a frame secured to a plate. The plate is attached to a rod which is jointed to a lever working on a fixed centre. " The spout of " the syphon is kept firmly pressed inside the socket by raising " the lever which is held in position by a rack and pawl. Another " lever serves to open the valve of the syphon by pressing " against the handle thereof until the vessel is filled;" and to allow of the escape of the air contained in it, " the latter is in " communication " with the escape pipe.

2. The bottle is placed on a stand with its neck upwards. The stand is raised by a treadle, and forces the neck against a pack-

ing ring "on the under side of the filling nozzle." This nozzle "contains also the cork," which is driven down into the neck by a hand lever and plunger; the stroke of the lever is limited by a buffer or stop. The nozzle is provided with a cock and is connected to the flexible tube.

To avoid danger from the bursting of the syphon or the bottle "a protecting cage" may be placed round them.

[Printed, 1s. Drawing.]

A.D. 1861, July 6.—N° 1723. (\* \*)

RIDSDALE, JAMES.—"Improvements in inkstands, applicable to the stoppers of bottles." The inkstand is composed of an ink reservoir and a sliding stopper which acts as a piston for raising or lowering the ink. Inside the neck of the reservoir is a groove (or two internal flanges may be formed therein), in which is placed a ring of vulcanized india-rubber or the like. The stopper fits air-tight into the ring; it is slightly tapering, with a small hole through it and a dipping cup at its upper extremity. The ring may be outside the neck, and the stopper be made to fit over as a cap, having attached to it a tube which extends from the dipping cup to within a short distance of the bottom of the reservoir. These arrangements may be adapted to either the inside or outside of the necks of bottles.

[Printed, 6d. Drawing.]

A.D. 1861, July 6.—N° 1725.

FARROW, CHARLES.—"Improvements in apparatus for affixing or applying capsules to the necks of bottles and other vessels." The frame is composed of a foot, an upright, and a peculiarly shaped arm on the top of the upright; these parts are united by a rod which passes through the upright, is screwed into the arm, and passing through the foot is secured by a nut. The foot carries a treadle which is connected to a fly wheel mounted on a stud on the upright. On one side of the wheel is a pulley in gear with an upper pulley, which revolves on an axle carried in bearings in the arm. At the outer end of the axle a hoop is fixed by means of arms, and four holes are bored in the hoop. Spindles are fitted into the holes; they are "forked at their inner ends" and carry small wheels; they pass through springs, which press them inwards but cannot draw them "out of the

"holes" by reason of pins. The pins "rest on inclines" carried by a second hoop, which fits over the first and is borne by arms; these connect it with a boss that turns with the pulley axle "but is capable of sliding longitudinally thereon." The prongs of a fork enter a groove in the boss; this fork is fixed to a vertical rod which is carried in brackets on the upright and the arm. On the rod is a handle, by moving which the inclines draw the wheels outwards. A third hoop is borne by arms which are so connected with the extremity of the pulley axle that the axle "can rotate independently of the hoop;" over this hoop "a disc of stout sheet vulcanized india-rubber" is tied.

The working of the apparatus:—Put a capsule loosely on the neck; draw the wheels outwards; place the neck and capsule between the wheels, the disc forming a rest for the end of the capsule; let the wheels return until they rest on the capsule, and as they are carried round by the pulley axle, "they press the capsule firmly into the rings or irregularities in the neck." To remove the bottle draw the wheels back.

[Printed, 10d. Drawing.]

A.D. 1861, July 18.—N<sup>o</sup> 1813.

JAKUES, JAMES ARCHIBALD, and FANSHAW, JOHN AMERICUS.—"An improved apparatus for, or mode of, stopping, plugging, or closing inkstands, bottles, and other vessels of capacity." The stopper employed is an elastic screw; the body is made of any hard substance, and lapped round with india-rubber uncured but prepared for vulcanization. It "is screwed into the female screw of a mould or die made with a female screw similar to that in the neck of the bottle." Whilst in the mould "it is submitted to the ordinary curing operation," whereby an accurately fitting male screw is formed. The female screw in the neck of the bottle is cut in a socket of hard material and fixed in the neck, or it may be made in the neck itself. If the bottle is made with a spout, the opening "communicating from the interior" with the open part of the spout will be closed when the plug is screwed down.

The core may be of hard rubber, and the covering of soft rubber; it may be screwed into a metal female screw and be vulcanized therein.

In jars or wide-mouthed bottles "the elastic part of the fastening or joint is secured to the outside of the neck," and

"the cover or stopper is made of metal, glass, porcelain, earthen-ware, or other suitable hard substance." The same effect may be obtained by placing an elastic washer at the bottom of the neck, so that when the cover is screwed down, "its lower edge will bed upon the washer."

The patentees apply their invention to inkstands and to ships' water tanks.

In all cases "the male screw may be of rigid, and the female screw of elastic, materials."

[Printed, 8d. Drawing.]

A.D. 1861, July 19.—N° 1815.

**WALKER, ROBERT.**—"An improved apparatus for stopping and packing bottles." The patentee substitutes washers of india-rubber or other yielding substance for the ordinary corks; these are pressed down upon the necks of the bottles, or the necks are pressed up against them.

The frame employed consists of two uprights and two cross rails; the under side of the upper rail has attached to it a convenient number of washers, and a corresponding number of set screws pass up through the lower rail. The bottles are placed over the screws with the orifice of the necks under the washers; the screws are then tightened, "thereby pressing the necks against the washers, which yield to the rim of the necks, and effectually close or stop them." The bottles are withdrawn by slackening the screws.

"Wedges or other agents" may be employed instead of screws.

The frames can be used for packing bottles stopped as above described or corked in the usual manner.

[Printed, 6d. Drawing.]

A.D. 1861, July 20.—N° 1829.

**PRICE, WILLIAM.**—"Improvements in tools for cutting shives and other conical blocks." A conical band of steel is secured round a conical mandrel or block by a metal ring. "The band does not extend round the whole circumference" of the mandrel; "there is a space left between the ends thereof, and the entering end is formed with a knife edge." The outer end of the band "is formed with saw teeth;" these are used for cutting wooden shives or bungs, the knife edge for cutting cork or other

soft material. The band is adjustable on the mandrel; it is made to protrude more or less according to the thickness of the article to be cut. The mandrel carries a screw-threaded spindle for connecting it to a lathe or other machine for communicating rotary motion. The material is pressed towards and into the tool, and the shive, &c. is pushed out by inserting a rod into an aperture formed through the spindle and mandrel.

[Printed, 6d. Drawing.]

A.D. 1861, August 9.—N<sup>o</sup> 1981.

MOTT, ALBERT JULIUS. — "Improvements in apparatus for drawing beer and other liquid from casks and other vessels, and in excluding the air from the liquids in or remaining in the said vessels." A "travelling medium" is interposed between the liquid and the air.

The vessel containing the fluid is made of "earthenware or porcelain, or the largest portion of the same of earthenware or porcelain;" it is provided with a "rigid top or disc" having an "air-supply aperture," with a bung hole, and with an outflow tap.

The medium is a flexible bag of air-tight material, "of a size and shape to fill or nearly fill the vessel when distended," but occupying small space when collapsed; it is secured air-tight at top to the cover or to the upper part of the vessel, and at the bottom to a dish-shaped float "preferably made of earthenware;" it is kept in shape by means of hoops, and it is collapsed (while the vessel is being filled) by means of a cord or chain which is fastened to the float and passes out through the air-hole.

Sometimes the medium is composed of an upper and a lower disc connected by a flexible diaphragm, so that when the discs are pressed towards each other the diaphragm will "project beyond the circumference of both and be when in use the part in contact with the internal surface of the vessel." The discs are worked by a bolt (passing through the upper and secured to the lower), a nut on the top of the bolt, and a coiled spring between the nut and the upper disc. The bolt is surrounded with "flexible india-rubber tubing," the ends of which are made fast to the discs. The upper disc is provided with an aperture through which the medium can be charged with water or air. The whole is kept level in the vessel by guides.

"If the weight of either of these travelling apparatus is not



“sufficient to overcome the pressure of the gases from some kinds of fermented liquids,” weights can be added.

[Printed, 8d. Drawing.]

A.D. 1861, August 9.—N<sup>o</sup> 1985.

GRIFFIN, JOSEPH, and GRIFFIN, CHARLES. — (*Provisional protection only.*)—“New or improved machinery for the manufacture or cutting of corks and bungs.” The knife and the cork holders “work independently of each other.” The knife is moved rapidly backwards and forwards by means of a connecting rod which is actuated by a crank. The holders are turned slowly by pinions which gear into others on an axle “parallel to the line” of the holders; the axle has a winch on one end. The knife is kept oiled by a saturated sponge which is fixed by springs upon a frame at the back of it. One of the holders is capable of a sliding (as well as a rotatory) motion, and both are armed with several points at their inner ends. The cork is carried to the holders by a table which rises by springs and is depressed by a treadle. The same movement of the treadle depresses the table and removes the sponge from the knife.

[Printed, 4d. No Drawings.]

A.D. 1861, August 20.—N<sup>o</sup> 2079.

ELLIS, JAMES.—“Improvements in means for sizing corks, or separating the larger from the smaller sized corks.” The machinery required for this purpose is carried by a frame, which is provided with “two travelling wheels” at one end and “two supporting legs” at the other, so that “the whole machine may be readily moved when required.”

The corks are placed in a hopper, whence they are propelled by a screw in the hopper into an “openwork cylinder or case.” In the cylinder is a larger screw or worm which “propels them forward” and causes them to fall “through the spaces between the strips, laths, or bands” of which the cylinder is composed. “Such corks as are too large to escape between the bars pass onwards and out at the other end of the cylinder.” The strips or bars of the cylinder are fixed at each end to a wheel which is made fast to a shaft. “Other strips of the same material also disposed in a circle” are fastened at each end to other wheels, which “have the power of moving loosely on the shaft” by means of suitably arranged “tangent screws;” and upon turning these

screws "the distance between the strips is regulated" so as to form a gauge. A roller above the cylinder and mounted in a triangular framing clears away any corks remaining between the strips. Motion is obtained by turning a "motion shaft," which acts upon a bevel pinion, and by it upon a bevel wheel "fixed on the hopper end of the machine."

"By suitable arrangements of the strips or bands and appliances the openwork cylinder might be rendered self-cleansing."

[Printed, 10d. Drawing.]

A.D. 1861, September 27.—N<sup>o</sup> 2417.

McCALLUM, DUNCAN.—"Improved arrangements for filling and closing bottles and other vessels." The stopper employed is "a kind of valve" consisting of a washer of leather or caoutchouc and fixed on a spindle in such a way that on being pushed into the bottle it "bends inwards or against the upper part" of the spindle, after which it expands and cannot be drawn through the contracted neck, the neck being "formed with a contraction," presenting internally "a kind of valve seat."

Or the stopper may be "entirely of caoutchouc," the top side being formed "with a short central stud," and the under side with "an enlargement," which prevents the edge "from being bent inwards and downwards sufficiently to enable the stopper to pass through the contracted bottle neck."

Filling and closing bottles containing aerated liquids:—The stopper being introduced, the bottle is held against the mouthpiece of the filling pipe. The mouthpiece is made with a side branch for the entrance of the liquid and with a stuffing box at the top for the passage of a tubular rod which contains the stem of a holder. This holder, whose lower part is formed like a crayon holder "but with the sides set to spring outwards," takes hold of the stopper spindle "prior to the bottle being applied to the filling mouthpiece." As each bottle is filled, "the stopper is drawn up into its place."

Closing bottles containing "non-expansive liquids":—The stud of the stopper is "elongated and formed with an eye; and when the stopper is drawn into its place a pin is passed through the eye and rests on the edge of the bottle mouth. The stud should be in a stretched state" when the pin is passed through.

To empty the bottle the stopper is pressed down.

[Printed, 8d. Drawing.]

A.D. 1861, October 2.—N° 2460.

**BREFFIT, EDGAR.**—"Improvements in machinery employed in "cutting hollow and solid corks." The patentee cuts solid and hollow corks from the same slab of cork by means of revolving hollow cutters.

To cut solid corks :—A guide is fitted into one end of a mandrel which slides in a standard. The slab is placed on the bed or table of the guide, its proper height and position being regulated by a slot and set screw. The workman presents the cork at one end of the slab to the cutter, and the first cork is cut out ; "the slab" is then pushed along the table of the guide until the nearest "edge of the perforation" arrives at an upright bar, when a second cork is cut out, and so on. The upright bar ensures a uniform distance, "so that enough and no more space is left than" what is required for the next operation of forming the hollow "corks."

To cut hollow corks :—The perforated slab is presented to a cutter of suitable diameter ; a plunger is fitted into the mandrel ; this "working truly concentric with the cutter" is passed through each former perforation ; "a second cut is made, and a hollow "cork formed."

The mandrel carries a moveable collar, which is secured to it by a set screw and regulates the depth of the cut by striking against the standard.

To cut tapered or conical corks :—The cork revolves. A conical stem, "having at its tapered end a disc," is attached "to the "shaft of an ordinary lathe head." On the end of a "screw "mandrel" is fixed a stem, a disc "being at its end also, but "working on a centre in order that it may revolve." The cork is secured between the discs which are armed with points to prevent the cork from moving when revolving. The cutter is secured to a table on the bed of "an ordinary slide rest," and the taper of the cork is determined by the angle which the table forms with the bed. The cork receives motion by means of a belt and pulley on the shaft, and the cutter by turning the handle of the rest.

[Printed, 8d. Drawing.]

A.D. 1861, October 17.—N° 2586.

**DE GROOTE, CHARLES.**—"An improved instrument for corking "bottles and other vessels." The patentee describes two instru-

ments which act on the same principle. 1. A tube of glass or porcelain, "the inside whereof is smooth and conical," has affixed to it a metal strap. The top of the strap is formed with a boss in which a rod slides. The upper end of the rod has on it a piece of caoutchouc, leather, or other substance suitable for deadening the shock from a mallet, and the lower end is enlarged to press on the cork. The bottom of the tube also is recessed to fit the neck of the bottle. A hollow needle or semicircular piece of metal fits loosely in a groove formed in the tube; its upper end is connected to a lever whose fulcrum is a pin passed through a projection on the strap.

The rod and the needle being raised, the recess is placed on the neck; a cork is dropped into the tube; the needle is lowered; and the head of the rod is struck. If the bottle is too full, the air and liquid "will pass out by the orifice formed by inserting "the hollow needle."

2. The corking rod passes down through guides fixed to a vertical stand. A lever, connected to the rod and working on the upper end of "a vibrating arm," carries at its outer end a weight for raising it and the rod; or the same may be effected by a spring. The tube is made in two parts; the upper part is passed into a piece fixed to the stand, and the lower part, recessed to fit on to the bottle neck, is inserted into the bottom of the piece. The hollow needle protrudes through one side of the upper part. The bottle is supported on a block of wood.

[Printed, 8d. Drawing.]

A.D. 1861, November 12.—N° 2840. (\* \*)

NEWTON, WILLIAM EDWARD.—(*A communication from Charles Close.*)—"Improvements in self-feeding inkstands." In this inkstand the reservoir is connected with a dipping cup at its side by the usual passage at or near the bottom of each. The reservoir is close at top, and a tube, which forms the novel feature of the invention, "is arranged to form an angular connection with the "partially exhausted air space, at or within the top of the reservoir above the ink, and the pen cup," at or about the height at which the ink is desired to stand therein. The reservoir is filled through the cup; for this purpose a pipe is required, surrounded at or near its lower end with a cork or flexible disc of sufficient size to form a close cover round the aperture in the bottom of the cup, and provided with a funnel tall enough to admit of

the ink being poured into the reservoir to nearly its full height.

[Printed, 6d. Drawing.]

A.D. 1861, November 13.—N° 2861.

BIRD, HENRY.—“Improvements in the construction of bottles “ and other vessels, and in stoppers for the same to indicate that “ they contain poison.” The bottles are made with “ a number “ of sharp angular points ” on their outer surface, and in some cases the outer edge of the mouth also is surrounded with a row of “ angular pointed projections.” The stoppers are formed with, or have applied to their tops, “ a number of horizontal sharp “ points radiating from and beyond the upper edge.” The object of this construction is that the bottle cannot be handled, nor the stopper withdrawn “ without the hand being brought “ into contact with one or more of the points,” and thereby “ giving a warning as to the dangerous contents ” of the bottle.

The tops of the stoppers may be varied in form, and there may be various methods of affixing them to the lower portion or body. The patentee does not confine himself to any “ precise details or “ relative dimensions, proportions, or forms.”

[Printed, 8d. Drawing.]

A.D. 1861, November 29.—N° 3012. (\* \*)

PERRY, ROBERT CRAWFORD.—“ An improved infant’s feeding “ bottle.” This invention consists in applying “ to the ordinary “ feeding bottle a novel form of valve ” made of some elastic material. The valve “ is in the form of a short tube,” one end of which is attached to “ the cork or stopper of the feeding bottle, “ the other end projecting a short distance into the bottle, and “ terminating in an orifice of about the same size as the outer “ diameter of the suction tube, which passes through it, a “ perforation in the cork or stopper admitting air to the interior “ of the valve.” On sucking, the air enters the perforation, and expanding the extremity of the valve enters into the interior of the vessel; but in case of the vessel overturning, “ the fluid “ acting on the exterior surface of the valve tends to close it “ more effectually.”

[Printed, 8d. Drawing.]

A.D. 1861, December 3.—N° 3027.

PICHERY, ANDRÉ MARIE AUGUSTIN, and DANAIS, PIERRE LOUIS.—(*Provisional protection only.*)—"Improvements in hermetically stoppering or covering jars, pots, vases, and other "like articles." The inventors polish with emery "the rim of "the pot or vase and also the edge of its cover" so as to form "a circular throat or groove surrounding exteriorly the mouth" and a similar groove on the cover. These grooves "will materially "assist the soldering with mastic" by which the pot is to be hermetically closed.

Or "the circular edge of the cover may be bevelled and ground "with emery," and this bevel "together with the inner protuberance of the rim" of the pot will assist the hermetical stopping. The cover "will present a square button, larger at "top than at bottom, which with the arrangement of the inner "throat of the pot" will assist the retention of the mastic.

[Printed, 4d. No Drawings.]

A.D. 1861, December 3.—N° 3031.

BOUSFIELD, GEORGE TOMLINSON.—(*A communication from William Augustus Shaw.*)—"An improved stopper for bottles, "decanters, jars, and similar articles." The stopper is peculiarly adapted for bottles which contain aerated liquids; it may, however be used with all sorts of bottles, jars, &c. It is made of vulcanized india-rubber, hollow, with an upper shoulder which rests beneath a corresponding shoulder in the bottle neck; with a lower shoulder which rests upon a corresponding shoulder in the neck; with a solid bottom which fits tightly in the neck beneath the lower shoulder; with "depressions" near the lower end "for the "purpose of making the cork more flexible at this point that it "may be more readily elongated when the cork is inserted, and "to facilitate the packing of the joint around the stopper when "pressure is applied to its lower end by the expansion of gas "within the bottle;" and with the portion that projects above the mouth "flaring to facilitate its withdrawal from the bottle by "hand."

To insert the stopper, moisten it, insert a rod into the hollow, apply pressure so as to elongate it, and cause it to enter the neck, withdraw the rod, and the stopper will accommodate itself to the neck and form a perfectly air-tight stopping. To withdraw the

stopper it is simply necessary to pull the projecting portion by the hand.

[Printed, &c. Drawing.]

A.D. 1861, December 11.—N° 3103. (\* \*)

CLARK, WILLIAM.—(*A communication from Victor Hippolyte Solon.*)—(*Provisional protection only.*)—"Improvements in stoppering bottles & other vessels." The bottle, jar, &c. to be hermetically stoppered, according to this invention, is made with an inner edge in the neck, to which is fitted a disc of glass, porcelain, or other hard and impermeable substance; mastic is run into the joint formed by the disc and inner edge; and a stopper of wax, india-rubber, cork, or other material placed on the disc completes the closing. If the vessel be an inkstand, the disc fitted to the inner edge is pierced with a hole; a second disc, of the same substance and similarly pierced, and a "small washer solid" with the disc," are laid on the first; a washer of india-rubber, gutta serena, or any other elastic substance, is superadded, and the whole is crowned by a cap bearing on the washer and screwed or otherwise fixed to the neck. When a dip of ink is required, the upper disc is turned by means of a small knob until the holes coincide.

[Printed, &c. Drawing.]

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## 1862.

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A.D. 1862, January 8.—N° 55.

STENHOUSE, JOHN.—"Improvements in rendering certain substances less pervious to air and liquids." Cork and articles manufactured from cork may be affected by this invention. The patentee impregnates cork with "paraffine, either alone, or mixtures of paraffine with beeswax or any of the vegetable waxes, or mixtures of paraffine with stearine, stearic acid, or any of the solid fatty principles, or mixtures of paraffine with lac, or paraffine or any of its mixtures dissolved in any of its usual solvents."

When corks or bungs thus treated are to be used for stopping vessels which contain fermentable liquids, they "should have

“ their sides pressed into a quantity of finely divided powdered  
“ emery, flint, glass. or other silicious substance,” whereby a  
small portion of the same becomes imbedded in the cork and  
enables the cork to adhere to the vessel “as firmly as if no  
“ paraffine had been employed.”

[Printed, 4d. No Drawings.]

A.D. 1862, January 11.—N<sup>o</sup> 86. (\* \*)

WILKINSON, WILLIAM. — (*Provisional protection only.*)—

“ Improvements in ornamenting and decorating metals, glass,  
“ porcelain, parchment, and other skins, and in the materials and  
“ ingredients employed therefor, also in protecting silver and  
“ gold on said materials, and on surfaces or plates of glass or  
“ metal, or plates of glass and metal combined, applicable to  
“ works of art, furniture, jewellery, and other articles of a useful  
“ and ornamental character.” The inventor informs us that one  
mode of ornamenting glass is applicable to “stoppers.” The  
process is as follows :—The stopper being formed hollow, he stains  
the outside thereof of any desired colour, “forming the pattern  
“ or ornament by removing parts” of the colour. He then  
silvers the inside and protects the work “with a waterproof cement  
“ composed by preference of white and red lead, and Brunswick  
“ black, mixed with suitable oils or varnishes.”

[Printed, 4d. No Drawings.]

A.D. 1862, January 17.—N<sup>o</sup> 127.

THOMPSON, NATHAN.—“ Improvements in apparatus for  
“ stopping bottles.” The neck of the bottle is formed with an  
external groove near its upper part, and with a projection on each  
side below the groove. The stopper is composed of a tightly  
fitting cork and a capsule, the former by preference riveted or  
otherwise fixed to the latter. The capsule fits over the upper  
part of the neck ; it has two recesses on its under side “to pass  
“ on to the projections ;” a hole on each side, which comes op-  
posite the groove ; on the exterior and at the sides “two project-  
“ ing inclines ;” and on the top “a transverse raised stop” and  
“ an inclined projection at right angles thereto.” The capsule is  
fastened on to the neck by a wire which passes over its top ; the  
ends of the wire are turned inwards and pass through the hole  
into the groove.



To release the capsule and cork "the wire is pushed away from the transverse stop at the top of the capsule up the incline;" this causes the wire at the sides to be "moved along the inclines at the side" and so to draw the bent ends out of the groove.

[Printed, 8d. Drawing.]

A.D. 1862, January 21.—N° 154.

BATE, JOHN.—(*Provisional protection only.*)—"Improvements in machines for corking or stopping the mouths of bottles, jars, or any vessel requiring to be stopped up air-tight." By means of this machine two or more bottles, &c. may be corked at a time. "A vertical metal frame" is secured to a bed of wood or iron; it has at the top a horizontal bearer wherein is a worm in which a screw works, motion being given to the screw by a weighted lever or fly wheel. At the bottom of the screw is attached "a moveable bearer" having affixed to it "the plugs which drive the corks or stoppers through gauged sockets (which are fixed in another stationary bearer) into the mouths or necks of the bottles."

[Printed, 4d. No Drawings.]

A.D. 1862, January 30.—N° 249.

DAVIES, WILLIAM.—"Improvements in apparatus for cutting corks and bungs." The frame which supports the mechanism "is made open along the middle for greater convenience in sharpening the knife and fixing and unfixing the various parts attached to the same." A bar "is fitted in bearings so as to move in a longitudinal direction" by aid of a handle or a hand lever, and "a long knife" is mounted on the bar. A sharpening stone is slightly pressed up against the cutting edge by a spring or springs whose pressure is regulated by screw or other means. Guides have secured to them end plates which carry bearings to enable the pivot ends of a "right and left handed or double screw shaft" to rotate. At the inner end of this shaft is a rod carrying at its inner end a spiked disc, and opposite thereto is a similar disc at the end of a rod which slides in a tube and is pressed forward by a coiled spring therein. A stud projects from the rod through the tube; it works in a slotted lever, to enable the rod to be drawn back for the insertion of the square of cork between the discs. The square is supported by a metal plate which is pressed up against it by coiled springs round "plunger pins." The knife "is disposed with its cutting edge at or about the level of the

“ centre of the spindles, and adjusted at a distance therefrom according to the size of the cork to be cut;” the contrivance for adjustment is described.

The knife and the rotating parts are connected in the following manner:—A sliding bar, supported by a sliding standard, is secured to the knife; at its outer end is a collar “travelling on the double screw,” also a pin “protruding from the inner circle of this collar and working in the threads of this double screw.” Connected to the pin on the outside of the collar is a cam, and “to the other end of the pin and within the collar a traveller;” when the cam strikes “the ends of the guides,” it causes the traveller “to move from a right handed to a left handed thread or vice versa.”

The knife can be adjusted to cut taper corks.

[Printed, 10d. Drawing.]

A.D. 1862, February 22.—No 479.

WHITE, DAVID BLAIR.—“Improvements in apparatuses for protecting liquids from the atmosphere while remaining in and during their discharge from the vessels containing the same.” The patentee describes the following methods of carrying out his invention:—

1. “Two double vessels” are employed, an inner or upper fitting into a lower and outer. The liquid is introduced at the bottom of the lower vessel; the base of the upper one rests on the surface of the liquid, “and its outer case enters some luting fluid placed between the thicknesses” of the lower one. A siphon tube is fitted to and passes through the base of the inner vessel, which descends as the liquid is drawn off. Or there may be a pipe and tap fitted to the bottom of the outer vessel. An air valve is provided for the top of the inner vessel and a tap for drawing off the luting fluid.

2. The upper vessel only is double; it is formed with a flange for containing a packing of india-rubber or other suitable material. Guide rods pass through the flange.

3. Both vessels are single, and holders secure and compress the packing against the sides of the upper one.

4. The containing vessel is “made at top with an enlarged rim having an aperture formed in it for receiving some luting fluid.” The flange of a cover enters the aperture and luting fluid. A vessel containing charcoal “is placed beneath the cover.” The siphon tube passes through the cover and the upper vessel into

the containing vessel. The upper vessel floats on the surface of the liquid, and a small quantity of oil "is poured in to fill the "annular space between" the two vessels. Packing may be fixed to the sides of the upper vessel "instead of the seating of oil." A tap may be used instead of a siphon; this tap and the air valve are connected by a rod so that they "work together."

5. The cover is dispensed with; a piston descends with the liquid as it is drawn off by a tap; and "oil is poured in to fill "the annular space between the piston and the vessel;" or the piston may be packed.

6. An apparatus for preserving dregs of wine &c., "which "require to be often poured into a receptacle:"—The vessel has a tap at bottom and a "stoppered opening at top." Oil is poured on the surface of the liquid, and fresh liquid is introduced through a funnel with a long stem which passes through the oil. A siphon tube may be arranged to pass through the stopper.

[Printed, 1s. 8d. Drawings.]

A.D. 1862, March 24.—N° 813.

FLEET, BENJAMIN.—"Improvements in apparatus for manufacturing and bottling soda water." The bottling apparatus is disposed at that part of the machine for making soda water "from "which the soda water is drawn in ordinary." A rest forces the bottle by means of a treadle up to the nozzle where it receives the water. The nozzle has "a vertical cylindrical passage through "it;" it is provided at the lower part "with a screwed gland" to hold in position a washer of leather or other suitable substance, against which the mouth of the bottle is forced and kept air-tight. A plunger is fitted into the passage; it carries at its lower end an inverted cup, leather, or other suitable packing "to make it gas "and water tight therein." The plunger is attached to or is a continuation of "a six or eight threaded screw of rapid pitch." The screw works in a suitably supported and stayed boss, and is actuated by a cross handle. The cork when placed in the apparatus "rests therein just above the emission orifice," and "about half a turn" of the screw is sufficient to bring down the plunger. The emission tube is opened and closed by a tap or by a valve opened "by an eccentric" which is fixed on the spindle of a handle and closed "by a slight spring on its stem and the "pressure on the receiver."

[Printed, 1s. 6d. Drawing.]

A.D. 1862, March 29.—N° 883. (\* \*)

HART, EMANUEL BERNARD.—(*A communication from Isachar Zacharie.*)—"Improved machinery for cutting cork, so as to render the same suitable for stuffing purposes," that is, that it shall be reduced to a condition "resembling stringy or fibrous material." The machine stands on a square iron frame and standards, and from front to back "a shaft is set in bearings;" the rear of the shaft carries a "circular knife-edged saw," the middle a driving pulley, and the front a screw "which gears into a worm wheel set on a shaft below the worm shaft." The worm wheel shaft "works in bearings at the top and front of the frame, and on each side of the worm wheel there is a cam on the shaft." These cams "regulate the motion of two levers below them, their fulcra being in the front cross bar of the frame, and they extend to the rear of the machine, where they are connected with rods, beams, and an universal joint attached to the knife boxes, and feeding boxes placed on the top of the frame." The knife boxes "have a square opening nearly in the centre, into which are fitted four or more blocks with grooves cut therein;" each groove "contains a knife, so that when placed in a position for cutting, four or more tiers of knives are visible." The feeding boxes "are square boxes open in front and rear with small openings on each side, top and bottom, for grooved rollers or cylinders to enter in part; the top of the box not being stationary permits of increasing or decreasing the quantity of cork to be used. From this loose cover, just in front of the rear roller, another independent cover is suspended from a rod attached to a large screw which turns in a female thread cut in a cross bar on standards outside and above the boxes; this cover exactly fits the interior of the box and reaches to the front. This inside cover is divided into four or more longitudinal strips or fingers; each finger is held from the top by a pin, the head of which rests on a cross bar through which it passes or plays freely, which bar is raised or lowered by a large screw passing through an opening in the full top and having its thread in gearing in a brace. Each pin is surrounded by a loose india-rubber ring, and regulates the pressure of the cork without regard to its uneven thickness or rough surface, when operated upon by the screw. There are in each feeding box six grooved cylinders;" these "protrude into the

passes through the tube, and "being suspended by its top end in a spiral spring is kept in its place and prevented from rising with the knife" by a pin.

"The feeding motion."—Two jaws rest on the table; they can be adjusted as to width by set screws; they are "horizontally fluted," and the space between them "is a little wider in front." Two vertical feed rollers "vertically fluted" are inserted into the jaws, and slightly project beyond the surfaces of the same; they are worked by "vertical shafts" connected by bevel wheels to a countershaft, wherein is fixed "a ratchet lever" acted on by the friction roller of a crank. This crank is keyed upon the same countershaft "which gives motion to the beam" in such a manner "that the cork wood is fed when the knife is up." The return motion of the crank is effected by a counterbalance weight, and an adjustable stud arrests the crank "on its return stroke, and thus regulates the feed of the cork to the knife." If the strips are not quite long enough to cut a certain number of corks exactly, the last piece (which would not make a cork) is pushed forward by a wheel, "so that it is not touched by the knife at all."

An apparatus for grinding the knives is attached to the left standard; it is driven by a band from the main shaft.

[Printed, 1s. 2d. Drawings.]

A.D. 1862, April 29.—N° 1263.

HENRY, MICHAEL.—(*A communication from Etienne Sebastien François.*)—"Improvements in apparatus for aerating liquids, and "in fastenings for the said apparatus and for other articles." The "fastening arrangement" is constructed in the following manner:—The neck of the vessel is recessed on the outer surface, and a collar is fixed to the neck. A mount or cap is placed on the collar. A lug is formed on two opposite sides of the mount, and a curved link is jointed to each lug, the other ends of the links lying "below the under side of the collar." A curved arm is jointed to each link, and when the arms are depressed they "take into and press against the under surface of the collar," securing the mount "in place against the neck of the vessel, whereby a fluid-tight joint is obtained."

[Printed, 8d. Drawing.]

A.D. 1862, May 10.—N<sup>o</sup> 1403. (\* \*)

CLARK, WILLIAM.—(*A communication from Jean Louis Abeilhau.*)—"The application of a vegetable fibre alone or in combination with other matters in the manufacture of felted and other fabrics, also a substitute for flock or powdered wool, and as a material for padding or stuffing, and for other useful purposes." The "vegetable fibre" mentioned is the down of "aquatic plants technically called 'typha,' and commonly known as reeds or bulrushes." When the down is sufficiently dry, it is separated from the seeds and worked until it possesses the fineness of silk. It may be employed in weaving by mixing it with silk, wool, cotton, flax, or other fibre; and for several purposes when combined with india-rubber or similar matter. Among the many articles enumerated to which it may be applied are corks for closing bottles containing gaseous or other waters.

[Printed, 4d. No Drawings.]

A.D. 1862, May 16.—N<sup>o</sup> 1491.

THOMPSON, NATHAN.—"Improvements in stoppers or covers suitable for closing bottles, jars, and other similar vessels." This invention is especially adapted for wide-mouth bottles or jars. The cover is "a plate of earthenware or similar material;" it may, if desired, "be formed with a projection to enter the jar as an ordinary bottle stopper." In the middle of the cover is "a recess" into which a piece of metal is fitted; this piece is made with a stem at bottom and is secured to a washer placed over the stem on the under side of the cover "by riveting the stem over." The stem is continued above the piece in the form of a screw, and on the screw is a nut carrying arms, which lie in grooves in the cover and have claws pin-jointed to their ends. "Four horns or projections" attached to the piece "embrace between them the stem of the screw" between two collars, "so that the screw is prevented moving up or down independently of the piece" and the cover.

When the cover is put on, a ring of elastic substance is placed between the bearing surface of the cover and the mouth of the jar; the claws turn down under a flange round the neck of the jar, and the stems of the claws pass through notches in the flange; "then by turning the screw by a suitable key, the claws

" are drawn up, and the stopper or cover is secured so as to close the vessel air-tight."

The foregoing arrangements are susceptible of modifications which the patentee describes.

" In making a cheap stopper for small bottles," the arms and claws are " of twisted wire and in one piece." There is " an open loop or ring left at the centre which passes over the centre screw and bears on the nut." The wire " has cross pieces at its ends;" these retain the ends under the flange.

[Printed, 1s. 4d. Drawings.]

A.D. 1862, June 4.—N° 1691.

CONROY, EDWARD.—" Improved machinery for cutting corks, bungs, and such like articles." This invention relates to improvements upon a machine for which letters patent were granted to A. V. Newton, June 28th 1859, N° 1540. The first improvement consists in giving to the frame which carries the revolving cutter plate an up and down motion when required, the object being to enable the cutter to make " two distinct cuts on the same piece of cork." One cut " will simply cut off the rough sides and angles of the quarter," the other " will make a finer and finishing cut;" both cuts " are effected during two revolutions of the quarter." The second improvement consists in giving to the holders and to the sliding feeder " considerable facilities for self-adjustment should any variation occur" in the length of the quarter.

1. " An upright sliding frame " having horizontal sliding plates secured to its upper ends, is arranged within a rectangular framing; at the lower ends are " stud axles carrying friction wheels." Within this frame is another frame sliding vertically thereon, and on it are the bearings of the cutter shaft, " which may be slightly inclined from a vertical line in order to give the required taper to the corks." The upper bearing has a stud projecting from it and passing through the inner frame; the stud can be secured to the frame by a nut " at any desired angle." The lower bearing " has a slot provided therein for its adjustment laterally; it may be secured in such position upon the frame as will give the desired inclination to the cutter shaft," whose lower end " rests upon the end of an adjusting screw;" the screw passes through a lug upon the lower bearing, " by which means the shaft can be

"raised or lowered." The inner frame has upon it a friction roller resting upon a lever, one end of which is hinged to a bracket, whilst at the other end is a friction roller resting upon a cam. Vertical motion is given to the inner frame by the cam "for the purpose of taking two distinct cuts from the cork." The thickness of the finishing cut is determined by an adjustable screw stop.

Motion is communicated from any prime mover by a band passing round a pulley on the cutter shaft and another passing round a pulley on a "short horizontal shaft," which carries a worm in gear with a worm wheel on the cam shaft. A cam on the cam shaft "near its centre gives the required traversing movement" to the outer frame. On the other end of the cam shaft is a bevel cog wheel in gear "with a similar wheel on the lower end of an inclined shaft," and this shaft carries a bevel wheel which drives a "horizontal cross shaft." The cross shaft has a cam at each end, and "immediately next the cams" are bevel wheels "having cogs extending nearly one-half round the wheel," thereby giving "two full rotations alternately" to two bevel cog wheels in gear with them. Two of the spindles of the cork holders have "their outer ends provided with a feather;" the feathers pass through the last-mentioned cog wheels, so that the spindles "may have a longitudinal movement" through the wheels. The spindles are kept in contact with the cams by coiled springs, and similar springs press forward the opposite spindles.

"To the face of the standards" which carry the feathered spindles, "but at right angles thereto," are secured guides between which horizontal bars slide; each bar bears a bracket "having on its face a spring slide" armed with points "which will enter the uncut cork or quarter and will draw it back between the caps" that are on the inner ends of the spindles. The sliding bars are actuated each by a cam and lever; their use, the shape of some of the cams employed, and the action of the machine are fully explained in the specification.

[Printed, 10d. Drawing.]

A.D. 1862, June 5.—N° 1701.

CONROY, EDWARD.—"Improved machinery for cutting corks, bungs, and such like articles." In one part of this machinery slabs of cork are cut into lengths, and in another part the lengths



are cut into squares; the rounding or finishing forms no part of the invention.

1. Upon one side of the frame of the machine are V guides whereon slides a saddle carrying the knife. The saddle slides horizontally by means of a connecting rod and a crank upon a cross shaft which is geared to the driving shaft. Below the knife is a bed having a turned up end for "holding the piece of cork against the thrust of the knife;" in the bed is "a longitudinal groove," in and along which "the lower point of the inclined edge of the knife travels;" the end or cross piece also is "cut through to allow of the passage of the knife." The width of the length is determined by an adjustable stop, the arrangement of which is as follows:—"When the forward stroke of the knife takes place," a pin projecting from a bracket on the saddle strikes a tappet fixed to the upper end of a spindle "capable of turning in a sleeve bolted to the inside of the framing and having at its lower end a cam" which acts on the projection of a slide. The cam moves the slide and the stop (which "is attached by a hand wheel and screw") to the required distance from the knife. On the return of the knife, the pin by striking the tappet "moves round the cam," when the action of a spring on the slide will draw back the stop and allow the separated length "to fall into any suitable receptacle."

2. Knives (their shape is shown in the sheet of drawings) are secured upon a shaft which is mounted on the frame of the machine and is driven by bevel wheels from the cross shaft. Immediately in front of the knife shaft and projecting slightly under it is a comb attached to a rocking frame by screws; the lengths are placed on the comb. To one of the stud axles of the rocking frame is fixed a lever linked to a weighted lever, which carries a roller bearing against a cam on the knife shaft; this "at one period of its revolution will cause the frame to be worked, so as to drop or throw off the squares or quarters which have just been cut."

A modification of the second part of the machinery is described in the specification.

[Printed, 10d. Drawing.]

A.D. 1862, June 28.—N<sup>o</sup> 1904.

THOMPSON, NATHAN.—(*Provisional protection only*).—"Improvements in apparatus for stopping bottles, jars, and other

"vessels, and in instruments for applying and removing such stopping apparatus." A stopper of "rigid and non-porous material" enters the neck of the bottle and fits on to or into a seat therein, an elastic substance being interposed between the surfaces. Connected with the top of the stopper, "but so as to be capable of turning freely," is a screw which passes through an outer lid; this lid also "fits into the neck;" it is notched at its periphery at any convenient number of points, and the interior of the neck has corresponding projections upon it, "so that the lid can only be dropped into its place when turned into such a position" that the notches and projections coincide. By rotating the screw with a key the stopper is forced down, and a tight joint is made.

Instead of notches and projections the neck may have a groove round it, and the lid may be made with a "flange projecting downwards" and having "a thickening ring at its lower edge to enter the groove." A notch "is cut in the flange of the lid at one side so that the lid may be slid sideways into its place."

Sometimes the lower stopper has "a screw attached so as to be able to turn freely;" in this case the stopper is screwed into a thread cut into the neck above the seat, and an upper lid is not required. Sometimes the screw is fixed "and receives a nut which is capable of being turned by a key." The nut "is fitted into a ring" to which lugs are jointed; the lugs catch on to projections on the exterior of the neck.

"A convenient instrument" for turning the screws is "an ordinary screw driver having jointed to it two levers which together act as nippers and take hold of the upper end of the screw."

[Printed, 4d. No Drawings.]

A.D. 1862, July 25.—N° 2114.

CLARK, WILLIAM.—(*A communication from Joseph Nicolas Montain Liézard.*)—"An improved apparatus for decanting wine." The bottle is carried by a basket or holder which can be inclined to any angle by means of the following mechanism:—A "horizontal double threaded screw" passes through "a drum or casing of cylindrical form united with the handle" of the basket. The screw carries a puppet and is set in motion by a crank. A "swan neck piece" is compass-jointed at one end to

the puppet and at the other to an arm attached to the basket. A flat spring is fixed on one side beneath the basket and on the other "to the head of the swan neck," rendering the general action "very gentle and even." When the screw is in motion the puppet moves to and fro, "and by receding from or approaching the drum causes the swan neck to rise or fall" and thus place the basket "either on a level or an incline."

"Any other arrangement for working" the basket arm may be adopted; gearing or "a vertical screw" may be used; a rack gearing in a pinion may be substituted for the traversing screw; two modifications are described.

[Printed, 10d. Drawing.]

A.D. 1862, August 14.—N° 2283. (\* \*)

WELCH, GEORGE.—"Improvements in inkstands, metallic pens " and penholders, and other instruments and appliances used in "writing and marking." The patentee details four inventions with modifications. First, in inkstands; one consists of a tripod stand, suspended from which is a metal cup with an ink vessel inside; each leg has on it a hollow projecting piece for the insertion of a pen. A second combines with it a date dial and a pen rack, the dial being placed at the back of the stand, the rack on each side and near the front. A third is a cylindrical reservoir with a dipping cup at each end; the mouth is at the top of the cylinder, and the stopper is hollow, constituting a red ink holder; the cylinder may rest on a stand, having a pen tray and a handle at each end, or one handle in the centre, jointed to the stand and capable of turning aside to give access to the red ink; or the stopper may be an open-jointed tube sliding along the cylinder and having recesses for pens on the top. A fourth consists of two concentric cylindrical vessels, the outer one fixed to a stand, the inner one rotating; the inkholder is inside the inner one; in each is a similar opening, coinciding when in use, and a partial revolution of the inner one by aid of a rod and milled head closes all access to the ink.

The remainder of the invention does not relate to this series.

[Printed, 1s. 6d. Drawings.]

A.D. 1862, August 20.—N° 2333.

CHINNOCK, CHARLES.—(*Provisional protection only.*)—"An "improved construction of corkscrew." This instrument consists

of "the common corkscrew formed by preference with a broad "knife-edged thread" and fitted loosely in a frame which rests on the neck of the bottle. The screw will pass down into the cork, and "the turning being still continued, the frame will then "act as a purchase and the cork will be caused to rise up the "screw into the frame."

[Printed, 4d. No Drawings.]

A.D. 1862, September 3.—N<sup>o</sup> 2443.

BOSSARD, PETER JOHN.—(*A communication from Louis Alexandre Farjon.*)—"Improvements in stoppers for bottles, jars, "guns, tubes, and other open-mouthed articles, in taps, and in "fixing them in casks and other vessels." This invention is partly an improvement upon the one "communicated to Richard "Archibald Brooman, for which Letters Patent were granted him "the 20th November 1860, No. 2842." In the specification of that patent no provision is made for preventing the separation of the two portions of the stopper; now a stop is introduced which prevents the parts from becoming entirely separated, whilst it allows of the greatest separation necessary.

The stopper is composed of an upper and a lower portion, an india-rubber ring capable of being expanded between the two portions, a male screw working through the upper portion into a female screw on the inside of the lower portion, and a stop in the female screw consisting of a screw with a head "so large as "to be unable to be passed through the female screw." The lower end of the male screw is tapped to receive the screw of the stop. The patentee does not limit himself to this form of stop.

Jars, &c. formed with a projecting rim at the top:—The seat for the stopper is ground conical, and a plate of earthenware with a conical edge is fitted into it. The stopper is secured by a band formed with hooked arms which take a bearing against the bottom of the rim, and by turning down the screw on to the plate. This arrangement admits of several modifications, which are described.

Bottles formed with a rim round the mouth:—A metal collar is fixed round the rim; the collar is made with two or four projections which take into one or two stirrups; these pass over the top of a cap inside of which is a plate carrying a caoutchouc or cork disc; a screw passing through the stirrups and cap presses the plate down upon the mouth.

**Taps :—**These are made with a caoutchouc band which when the tap is in place “lodges in the thickness of the staves ;” and on turning the tap a flange presses against the band “and expands the caoutchouc so as to secure the tap tightly in place.”

[Printed, 1s. 2d. Drawings.]

A.D. 1862, September 19.—N° 2576.

**CHINNOCK, CHARLES.**—“Improvements in the construction of corkscrews.” The screw is mounted in an open frame, the upper end of which forms a guide for the stem of the screw and “serves also as a fulcrum for receiving the pressure which is applied in the act of withdrawing the cork.” The upper end of the stem is squared and attached to the handle in the usual manner. The neck of the frame is “of a helical form which presents a snail face to a loose helical or tubular piece,” and the acting surface of this piece “presents a corresponding snail face to the fixed helix or snail face on the frame.” The upper edge of the tubular piece is cut with ratchet teeth, which take into the ratchet teeth of a disc fixed to the screw stem immediately below the handle and lock the handle and loose tube together when the screw is piercing the cork. The cork is drawn “by continuing to turn the handle in the same direction.”

Sometimes “for the purpose of easing the action of the cork-screw” a coiled spring is added ; a loose collar is dropped over the neck of the frame, and thereto is attached the lower end of the spring, the upper end being secured to the “ratcheted end of the tube before-mentioned.”

“An efficient corkscrew for common use” may be made without the snail-faced parts and the coiled spring, but “the screw-thread must be sufficiently long to pass through the cork and allow of the cork rising up the thread as the screw continues to be turned.”

[Printed, 10d. Drawing.]

A.D. 1862, November 18.—N° 3100.

**THOMPSON, NATHAN.**—“Improvements in apparatus for stopping bottles, jars, and other vessels.” The patentee describes four methods of stopping bottles, &c.

1. The neck of the bottle, &c. is formed with two grooves on the outside. A piece of metal extends “half round the neck ;”

its upper and lower edges form flanges, the lower one entering the lower groove, the upper one coming "just above the top of the neck." The piece is secured to the neck by a narrower strip soldered to the piece; the strip is lodged in the upper groove; it may be fastened to the piece and be secured to the neck in other ways. The mouth is closed by a disc and some compressible material interposed between them. The disc "and the screw which actuates it" are carried by a metal cap. The cap on one side (for half its circumference) is deeper than on the other; the deeper portion is flanged at bottom and enters the lower groove; the other portion which "terminates at the top of the neck" is flanged outwards and enters under the upper flange of the piece. In the top of the cap is a hole, beneath which a screw nut is fixed to the cap, and the screw which works in it is attached to the disc in such manner "that the screw can turn freely independently" of the disc. The cap "is slidden sideways into its place," and the screw (recessed at top to receive a key) presses the disc down on to the top of the neck. The top of the cap "is made with a shallow recess" for the application of a seal. It is not essential that the screw should be attached to the disc.

2. Sometimes the flanged piece is dispensed with; the neck is flattened on two opposite sides; the cap is similarly flattened; "and the flange at its lower edge gets a hold in the groove in the neck of the vessel for about two-thirds of the circumference."

3. A stopper of "rigid and non-porous material" is fitted into the neck "on to or into a seat therein," some elastic substance being placed between the surfaces. Connected with the top of the stopper is a screw which passes through an outer lid and is turned by a key. The lid fits into the neck; its periphery is notched at any number of points; the interior of the neck is made with corresponding projections; and when the lid is in place, the screw is rotated and forces down the stopper.

4. The bottle neck is made with a screw thread above the seat; when the stopper (with the elastic substance) has been introduced, the screw connected to the top of the stopper is turned at once into the screw thread.

[Printed, 2s. 8d. Drawings.]

A.D. 1862, November 22.—N<sup>o</sup> 3146.

NEWTON, ALFRED VINCENT.—(*A communication from Isaac Goodspeed.*)—"Improvements in machinery for cutting corks."

Under the front part of each arm extends the lower portion of a bent lever; a spring bearing against this portion tends to keep the upper end of the lever "out from the spindles" of the arms.

The mode of feeding and the operation of the machine are fully explained.

[Printed, 1s. Drawings.]

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## 1863.

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A.D. 1863, January 7.—N<sup>o</sup> 53.

NEALE, JOHN.—(*A communication from Emile Barrault.*)—(*Provisional protection only.*)—"Improvements in the manufacture of "capsules." These capsules are made by combining with a disc of wood, glass, porcelain, or other material (which may be embossed or otherwise ornamented) a piece of flexible metal "shaped somewhat resembling a lady's collar." The metal piece "is then, at a point near the narrowest part of such piece, wrapped round the disc," and by pressure is forced into a groove formed on the edge of the disc.

[Printed, 4d. No Drawings.]

A.D. 1863, February 5.—N<sup>o</sup> 325.

BETTS, WILLIAM.—"Improvements in apparatus for applying "metallic capsules to bottles." An upright is secured to the seat of the "capsuling stool," or to a bench or table. The upright carries a bracket, whereto is fixed a metal plate adjustable in height by passing connecting screws through vertical slots in the plate. "A semicircular notch is formed in the upper edge of the "plate to receive the neck of the bottle." A "compressing loop," by preference of catgut, has one end fixed to a lug on the plate; it then passes "under and in front of the bottom of the notch "and over the top, and finally descends to a connecting rod "secured to a treadle." The lower portion of the loop is held down in its place just below the edge of the notch by a wire or cord which is connected to a weight or a spring. A projecting piece on one side of the notch retains the loop in place close against the plate.

f The neck of a bottle with a capsule thereon is inserted into the loop; the treadle is depressed "so as to cause the loop to close upon and grip the capsule immediately behind the rim on the neck"; a turn is given to the bottle; and the capsule is firmly compressed. The treadle is drawn up again by a helical spring.

[Printed, 10d. Drawing.]

A.D. 1863, February 7.—N<sup>o</sup> 350. (\* \*)

MILLER, JAMES, and STRUTHERS, WILSON.—(*Provisional protection only.*)—"Improvements in securing the corks, stoppers, or lids of bottles, jars, and other similar vessels." These improvements consist in forming two holes opposite to one another in the neck of these vessels during their manufacture, or while they are soft, so that a "wire, a pin, or other retaining medium may be easily passed through the cork." "The projecting portions of the wire are secured by passing the ends down under the external rim and twisting the extremities together; or if string is used for the purpose, the ends are firmly knotted." Greater security may be obtained "by carrying the wire upwards and over the cork, and then twisting the extremities together." Pins or screws, or a pin and screw, formed either of wood or of iron or other suitable material, may secure the cork or stopper by being passed through the hole or holes, and being pressed or screwed into the cork or stopper. Where these stoppers are formed of glass, china, earthenware, gutta percha, or other suitable material, a transverse or circular aperture is formed in the stopper to correspond to the holes in the neck of the bottle or jar."

For wide-mouthed jars the lids usually overlap the mouth of the jar, and holes are pierced through the overlapped portion of the lid as well as in the jar itself, and they are fastened by pins or straps. "In the case of jars where the lids fit inside of the mouth an indented ring is formed round the edge of the lid, into which the pins passing through holes in the neck of the jar fit; or holes corresponding to those in the neck of the jar are pierced into the cover of the lid into which the pins fit; or the lid may be sunk sufficiently far into the neck of the jar so as to admit of a pin or pins being passed through the holes in the neck across the top of the lid, thereby fixing it firmly in its place."

[Printed, 4d. No Drawings.]



A.D. 1863, February 7.—No 352.

REDRUP, GEORGE.—“Improvements in machinery for the cutting of shives, bungs, corks, spiles, and vent or other pegs” and also in machinery for manufacturing the knives or cutters employed therein, such machinery being also applicable to the manufacture of trenails and other cylindrical and conical articles.” This invention chiefly relates to improvements on the invention for which letters patent were granted to Mr. Redrup on June 24th, 1859, No. 1520.

1. “A machine for cutting shives, bungs, or corks”:—An inner spindle carries a “presser plate,” an outer one the cutters. The spindles “are moved to and fro horizontally, and up and down” vertically according to the position of the machine by means of “levers.” The outer spindle carries a drum or pulley round which a belt is passed to communicate motion; it is furnished with a worm wheel which gears into a wheel “working on an axle” pin secured to the bed plate of the machine.” On one side of the last mentioned wheel is a cam groove, into which a pin in the boss of one end of a lever takes, whilst the other end is provided with a pin that takes into a groove on a collar on the cutter spindle. The inner spindle “is slotted on the outer end,” and is forced up to the shive, &c., by “a weighted lever or spring, having” one end thereof inserted in the slot.” Near the slotted end is a collar, against which the grooved collar “presses as it and the cutters are withdrawn,” and the shive, &c., is forced off the face of the cutter bed by a spring pin that passes through the bed. The collar and the lever can be set to suit “the varying thickness” of the wood, or other material.”

2. “A machine for cutting spiles and vent or other pegs”:—This machine “has in addition to the arrangement above described a table placed at the back of the cutter bed” and furnished with one or more pulleys and a belt which carries the material towards the cutter. The material passes “under a pulley” near the cutter plate,” or over a rest from which it is prevented from rising by a sliding piece; it rests against a ratchet wheel whose teeth propel it towards the cutter “during a portion of the revolution of the cam wheel.” In this wheel is a pin which, as it passes by, slides upon a lever and thereby communicates motion to an adjustable lever whereto the driver of the ratchet wheel is attached. On a portion of the cam wheel is a pro-

jecting piece which "forces down the outer end of a lever," whose opposite end "forms a bearing for a spindle carrying a circular "saw" and a pulley; the band by which the saw is driven is kept tight by a weight or a spring.

"The other parts of the machinery" in Nos. 1 and 2 "are similar to those described in the specification" of the former letters patent, "and therefore need not be more particularly described."

3. A machine "adapted to cut several spiles or pegs at one operation":—A hollow spindle is mounted on bearings secured to a bed plate. On one end of the spindle is screwed a cap "formed with a square orifice, through which a square rod "of wood or other material is passed until it pushes against a plug" that is "free to revolve in its bearing." Between the cap and the plug is placed a tool rest which slides between cheeks. "To the front of the bed of this rest is attached a tab," provided with a set screw and nut for regulating "the throw of the rest." To the back of the rest is fixed a lever "which is also hinged to a projection or projections on the front bearing of the spindle." To one end of the rest is attached a knife "for cutting off spile or vent or other pegs, after they have been shaped into the requisite form" by a series of cutters "secured to the top of the rest" by screws and washers. The bearing of the plug is fastened to a carriage "furnished with four flanged wheels running upon two metal guides"; the carriage is drawn up towards the spindle by a weighted cord.

4. Machinery for making the knives :—This "consists of a pair of rolls so supported in bearings that access may be had to one end of the rolls; the other end is turned down and fitted with wheels gearing into each other." One roll is "of a tubular or conical form" according to the intended shape of the cutter; it acts as a mandrel, whereon one end of a suitably shaped piece of heated steel is placed. The other roll is "of a suitable form for pressing the heated steel round the mandrel."

Portions of each machine admit of modifications.

[Printed, 1s. 10d. Drawings.]

A.D. 1863, February 19.—N° 458.

THOMPSON, NATHAN. — "Improvements in apparatus for stopping bottles, jars, and other vessels, and in tools for pro-

"ducing parts of such apparatus." This apparatus for stopping is, says the patentee, "a modification of the apparatus described in my former provisional specification, dated the 18th November, 1862 (No. 3100.)"

A metallic ring "with flanges projecting inwards from its upper and lower edges" is divided into two parts which are hinged together. To the upper flange of one part is soldered a circular plate of the same diameter as the interior of the ring, and in the centre of the plate is a hole, immediately below which a screw nut is fixed. The nut receives a screw, to the lower end of which a plate is connected in such a manner "that the screw can turn independently of the plate;" the upper end is either made with a knob or recessed for the admission of a key. The plate has attached to its under side a packing of cork or similar material; or its bottom is covered with a "thin sheet of tin" whereto the packing is cemented. Both plates are "raised up or arched in the centre."

When the apparatus is placed on the neck, the half rings are closed; the flange at the lower edge enters the groove in the bottle neck; the plate at the lower end of the screw comes immediately over the mouth; "the upper flange of the part of the ring which is not attached to the top plate comes over the edge of the plate so as to hold it down to the neck;" and the screw forces the plate at its lower end down on to the top of the neck.

Sometimes the plate or disc which closes the mouth is of wood "with a thin plate of metal at the back, and a packing ring of vulcanized india-rubber or cork on its bearing surface." The tool for making such discs consists of (1) a steel cylinder (whose interior diameter is equal to that of the discs to be cut) with teeth at its lower end; (2) a "circle of teeth wider than the first" within the cylinder; (3) within this circle a rod "which is pressed outwards constantly by means of a spring." The outer teeth cut out a circular piece; the inner teeth "a recess or shoulder to receive the packing ring;" the rod ejects "from the tool the disc which has been cut." The cylinder and the circle are adjustable as to distance. The discs are to be saturated with a mixture of wax and lard "to render them impervious to moisture."

Sometimes the discs are made of glass or pottery, or of enamelled iron.

[Printed, 8d. Drawing.]

A.D. 1863, April 1.—N° 839.

CLARK, WILLIAM. — (*A communication from Charles Pierre Laurens, Adolphe Peret, and François de Trégomain.*) — “Improvements in preventing fermentation in alcoholic and other liquids while drawing them from their containing vessels, and in apparatus for the same.” The apparatus is applied to the vessel as a vent peg; it communicates with the vessel at one end and with the external air at the other; it contains “a disoxygenating solution arranged in such manner that the atmospheric air cannot enter the barrel without passing through said solution and giving up its oxygen thereto.”

The upper part is made in two portions screwed together; the lower part is a “hollow cast-iron plug” screwed to the upper part. The upper part “carries a pipe in communication with the atmosphere.” This pipe (not far from its upper end) “is severed into two parts united together by an india-rubber tube;” its lower portion “has a funnel mouth for increasing the extent of surface of atmospheric air in contact with the disoxygenating liquid,” and just above the mouth is “an appendage to said pipe for prolonging the action of the air on the disoxygenating liquid.” Branch tubes, “which terminate above the level of the disoxygenating liquid and serve for the introduction of disoxygenated air into the barrel,” communicate with a pipe that enters the iron plug. The apparatus (excepting the plug) is made entirely of tin, and is “somewhat egg-shaped in form.”

The liquid and proportions for a barrel of about 45 gallons are about 13 ounces of “sulphite of protoxide of iron” or 20 ounces of “copperas” and about 12 ounces of “sulphite of lime,” dissolved in a quart of water. “If only one of these substances be employed the amount of it should be doubled.” Other substances may be employed “either in a solid state or in suspension or solution in water or other liquid.”

[Printed, 8d. Drawings.]

A.D. 1863, April 14.—N° 939.

TRAPNELL, HENRY. — (*Provisional protection only.*) — “Improvements in vent pegs.” The pegs are made in the form of metal tubes, each being provided with an ordinary cock for the

entrance and shutting off of air, and with a screw at the lower end for fixing into the barrel.

Some are made so that they may be driven in by a mallet; the tops of these are closed, slightly expanded, and perforated laterally above the cock.

[Printed 4d. No Drawings.]

A.D. 1863, May 22.—N° 1283.

MASCHWITZ, CHARLES.—(*A communication from Ferdinand Krauskopf.*)—(*Provisional protection only.*)—"Improvements in "stoppers or bungs for closing or stopping bottles, jars, and "other vessels, and the muzzles of rifles, and for other like "purposes." This stopper is "capable of being made to contract "and expand in diameter;" it consists of "a cylindrical or "slightly conical body" of vulcanized india-rubber, the upper end having a flange. "In the axis of the body" is a hole passing through the flange nearly to the bottom, and "a metallic or other "rod having a button at top" is fixed in the hole. The diameter of the stopper is somewhat greater than that of the opening to be closed, and the stopper is inserted by pressing the rod and thereby elongating the body. The removal of the stopper is effected in the same way.

The rod may be made to advance or recede "by means of a "screwing action."

[Printed, 4d. No Drawings.]

A.D. 1863, May 23.—N° 1294.

PICKERING, JOHN ALEXANDER.—(*Provisional protection only.*)—"Improvements in covers or capsules for bottles, jars, and "similar vessels."

The capsule is made of india-rubber (vulcanized or not) or other elastic material, "in the form of a flat or slightly concaved disc, "cup-shaped or otherwise, but having a rim or lip of greater "thickness and strength than the body or middle portion;" it may be made "in various ways."

In applying such a capsule, it is stretched over the neck, and the thickened rim is brought well under the lip or flange of the neck, the body "being tightly distended or stretched across the "mouth of the vessel or over the cork or stopper when the latter "is used."

[Printed, 4d. No Drawings.]

A.D. 1863, May 25.—N° 1317. (\* \*)

HAYWARD, RICHARD.—(*Provisional protection only.*)—"Improvements in apparatus for bottling liquids or for drawing or letting off at the same time liquids from several different casks or vessels." A vessel having several short pipes attached to it is put in communication by means of those pipes with "the taps of the several casks or vessels from which" it is desired to "draw or let off liquids." The liquids from such casks or vessels are made to "flow into my apparatus or vessel, from which they can be drawn or let off by a tap or taps into bottles, or into a bottling machine," or into other vessels, and thus "several different liquids" can "be blended with facility."

[Printed, 4d. No Drawings.]

A.D. 1863, May 28.—N° 1341.

BAXTER, CHARLES FRANCIS.—"A new and useful hollow elastic stopper for bottles, jugs, and other similar vessels." The stopper is made of any suitable elastic substance; it is "provided with a cavity opening in the end entering the bottle." The object of the cavity is "to save material, permit any interior force to press the sides of the stopper more firmly to the neck of the bottle to prevent its expulsion, and thus save the usual necessity of sealing and tying, and effect the easy removal of the stopper by pressing upon one of its sides."

Sometimes the stopper is made with a shoulder to fit a corresponding groove formed in the bottle neck.

[Printed, 6d. Drawing.]

A.D. 1863, June 29.—N° 1619.

DAVIES, GEORGE.—(*A communication from Edward Borie and Alexander Mackie.*)—"An improved cork-cutting machine." In a table supported by a frame is an opening within which a horizontal pulley is arranged to revolve freely, being secured to a vertical shaft which is caused to turn rapidly. To the rim of the pulley are secured curved blades of tempered steel, "the blades being bevelled from the inside and reduced to a sharp cutting edge, and the whole forming an annular vertical knife." In front of the knife is a standard wherein a tubular shaft turns freely, and another shaft passes through the tubular and turns freely in it. The outer end of the inner shaft carries an arm to

which a vibrating motion is imparted by mechanism actuated by the same prime mover as the knife. The tubular shaft carries a disc connected by bolts to an annular plate. Four spindles at like distances apart turn and slide horizontally in the disc and plate; each has at one end a head with inclined teeth, and at the other a roller; each is provided also with a pinion and with a coiled spring which tends to force the spindle inwards. The teeth of the pinions "are adapted to those of a segment" which is secured to the inner shaft. Fixed to the table is an inclined plate, from the control of which the rollers escape at certain periods. On the tubular shaft "at the opposite side of the standard" is a like arrangement of disc, plate, spindles, &c., except that the spindles do not slide. In the face of the hub of this disc are "four inclined recesses forming four abrupt shoulders," against each of which in succession bears the end of a spring catch secured to the back of the segment. The hub together with the tubular shaft "is held by the end of a bar" arranged "to slide in a block" which is fastened to the table, the end of the bar being acted on by a spring. The cork (in oblong blocks) is placed on a flanged tray "so as to be within the range of the heads" of the spindles.

The operation of the machine is fully explained in the specification.

[Printed, 8d. Drawing.]

A.D. 1863, June 29.—N° 1622. (\* \*)

HICKS, LUCIEN EZRA.—(*Provisional protection only.*)—"An improvement in inkstands." The ink reservoir is of glass or other material; its top is nearly flat and has a hole in the centre. A diaphragm rests on the top, secured by the edge of a hollow metal cap, through the middle of which the pipe of the dipping cup "passes and sets within an india-rubber cylinder" fixed to the centre of the diaphragm. The pipe descends into the ink and terminates with an elastic tube having holes through the side. Within the cap is a lever with a fork at one end, which "takes a thimble around the said rubber cylinder." A key at the other end, when pressed upon, causes the lever to lift pipe, cylinder, and thimble, to extend the diaphragm, and to admit air into the reservoir, the contraction of the diaphragm when relieved from pressure causing the air to force ink up into the cup. "A

“small tube of rubber, formed with an opening through the said diaphragm when lifted, lets the air out of the reservoir, and the ink finds its level; this tube forms an air valve, and is ordinarily kept closed air-tight by a spring around the tube acting between the metal cap and the surface of the diaphragm.”

[Printed, 4d. No Drawings.]

A.D. 1863, June 30.—N<sup>o</sup> 1625.

JENNINGS, JOSIAH GEORGE, and LAVATER, MANUEL LEOPOLD JONAS.—“Improvements in stoppers and lids or covers for jars, bottles, and other vessels, also in closing and fastening other articles.” These stoppers are so constructed that they can be “expanded and caused to fit accurately” by forcing air into them.

1. Stoppers for bottles:—The portion that enters the neck is of vulcanized india-rubber, hollow, and closed at bottom. The portion above the mouth is connected to a metal tube, and across the lower part of the tube a disc is soldered. In the middle of the disc is a conical hole for the reception of a conical valve of vulcanized india-rubber opening inwards, and borne upwards by a convex spring with air holes in it. The upper part of the tube “is closed by a portion of a sphere of vulcanized india-rubber, at the top of which is an air hole.” The stopper is taken out of the bottle by passing a wire through the hole in the sphere and pressing the valve downwards, thereby allowing the compressed air to escape from the interior of the stopper.

2. Stoppers for jars, &c:—The lid is generally of the same material as the jar; it has around its circumference a groove (by preference dovetailed), in which a tube of vulcanized rubber “when unexpanded lies entirely.” In the lid is formed a chamber, from the lower part of which a passage leads to a small tube projecting from the vulcanized tube. Across the chamber is a disc, with hole, valve, and spring, as before described; and the top of the chamber is closed by a portion of a sphere of vulcanized rubber having an air hole in its upper part. The lid, which may fit inside or outside the jar, is removed by aid of a wire which depresses the valve.

“The lid may be provided with a washer on its under side near its outer circumference, and the joint be made air-tight by the lid being drawn down on to the jar by air drawn from the in-



"terior by a similar arrangement to that described for forcing air into the tubular ring." The valve however must "open outwards," and the hole from the chamber must "open directly into the interior of the jar." The whole of this arrangement is described in the specification.

[Printed, 10d. Drawing.]

A.D. 1863, July 6.—N° 1679.

BONFIELD, BENJAMIN.—(*Provisional protection only.*)—"Improvements in stoppers for bottles." These stoppers "may be made as cheaply, or nearly as cheaply, as common corks, and may also be used several times."

The stopper is made by preference of white wood, but hard rubber compound, gutta percha, or other substance may be used. The portion which is to be inserted into the neck "is split or divided into two pieces," and between them "a wedge piece fixed on one end of a spindle or screw may be moved up or down," and cause the stopper "to expand and fit the neck of the bottle tightly." The upper part of the screw passes through an elastic disc, which rests on the top edge of the mouth, and when forced down thereon forms an air-tight joint. The pressure of the disc is effected "either by turning it round on the screw, or by drawing up the screw by means of a nut."

The expanding "may be effected by a hinge or toggle joint."

[Printed, 4d. No Drawings.]

A.D. 1863, July 29.—N° 1878.

THOMPSON, NATHAN.—"Improvements in apparatus for stopping the bung-holes of casks and similar vessels, also in tools or implements for fixing and removing such stopping apparatus." The bung-hole "is made larger on the outside of the cask than it is within," and a lining is screwed into it or fastened to it by means of a flange and screws. At the bottom of the lining is a valve seat, and in its sides are vertical and horizontal grooves or bayonet catches. A lid fits flush on to the top of the lining; on its under side is a flange which enters the upper part of the lining, and on the flange are projections which pass into the catches. In the lid are three holes, one in the middle with a smaller one on each side. A stopper bears on the valve seat; it "consists of a metal plate clothed on its under side with

"a sheet of cork." A screw, passing through the middle hole (which is tapped), is connected at its lower end to the stopper, so that it can "turn independently" of it; at its top is a socket for a key. The stopper is forced down into its seat by means of the screw, and together they answer the purpose of a vent peg also.

The instrument "for removing the stopping apparatus" consists of (1) a handle; (2) a cross bar jointed to the handle; (3) two hooks (which take into the side holes) on the cross bar; (4) a key which passes through a hole in the middle of the bar.

In the provisional specification the patentee describes a tool for cutting the bung-hole and fixing the lining; it has at one end a suitably formed "auger bit," and at the other "projections which fit the bayonet grooves;" it has also "handles for turning the auger."

[Printed, *8d.* Drawing.]

A.D. 1863, August 6.—N<sup>o</sup> 1945. (\* \*)

QUELLE, EUGÈNE EHRENFRIED.—"Improvements in ink-stands." The inkholder and dipping cup are of porcelain, bronze, or other material; the former is fitted with a collar at each end; or inkholder and collars may be made in one piece. It is supported by pins or screws (about which it is free to oscillate), which pass through standards fixed to a base plate and united at top by a cross plate. One portion of the cross plate projects and forms the cover of the dipping cup. From the collars arms extend backwards, which terminate in forks for the reception of a penholder or pencil; the arms are strengthened by a stay. The inkholder is so truly balanced that, when the penholder is resting in the forks, the top of the cup abuts against the under side of the projection; and, when it is removed, the inkholder revolves until the dipping cup is arrested by the base plate.

[Printed, *8d.* Drawing.]

A.D. 1863, September 9.—N<sup>o</sup> 2216.

NADEN, THOMAS, the younger.—(*Provisional protection only.*)—"Improvements in raising the covers or lids of hot water jugs, tea pots, coffee pots, and other vessels," "without the hand coming into direct contact with the said covers." The cover is jointed to the vessel in the ordinary way, but "a knuckle or short arm beyond the said joint" forms "a prolongation of that

“to entirely cover the empty space in the the neck of the bottle.” For the manufacture of these capsules he employs a modification of the before-mentioned patent, in which, *inter alia*, he increases the number of punches from 13 to 19 or 20. The capsules when finished are “in the form of a truncated cone,” and any trade mark or name may be produced upon the end during the manufacture; they may be made however “by means of hand punches.”

3. Method of fixing capsules on champagne and similar bottles:—The bottle with a capsule round its neck is laid on a bed provided with a sliding stop, against which the bottom of the bottle is held; the neck lies in a matrix, whose hinged counterpart descends, squeezes the capsule into close contact with the neck, and nips up the superabundant metal between the flat faces into two folds. The neck is then laid in another matrix to which two dies are hinged; in the matrix is a slot for the reception of one fold; the opposite fold “is turned or folded down neatly into “the capsule” by bringing down one of the dies, and the remaining fold is turned down by a second operation. The maker’s name is stamped on the other die, and may be impressed on one or both of the sides of the capsule. “To smooth and “sleek the capsule,” it is afterwards passed through “any loop machine.”

[Printed, 1s. 6d. Drawings.]

A.D. 1863, October 28.—N° 2664.

PROCTER, STEPHEN.—“An improved instrument for extracting “corks from bottles.” This instrument is to be employed for pulling out corks or pieces of cork from bottles “in order that “such bottles may be rendered fit for further use.” It consists of a thin piece of fluted metal with a loop or handle at one end and a hook at the other. About an inch and a half above the hook are “two cutting hooks” attached to and “forming part of “the sides of the fluted portion.” The cork is cut into pieces by means of the cutting hooks, and the pieces are pulled out by the hook at the end.

“When a very cheap instrument is required,” the cutting hooks are dispensed with, and the hook at the end has its edges sharpened.

[Printed, 10d. Drawings.]

A.D. 1863, November 6.—N<sup>o</sup> 2754.

DAVIES, WILLIAM, and CATE, GEORGE.—(*Provisional protection only.*)—"Improvements in machinery for cutting corks, " bungs, gun wads, and other similar articles." A roller is mounted between two ribs, which are cast at one end of a foundation plate. In the roller is a groove wherein a pin fixed in a slide travels, causing the roller to rotate. "The machine is put in motion by " a forward and backward action;" the former causes the roller to revolve half a circle, the latter the other half circle. This motion enables a knife "to traverse twice its length in cutting a " circular cork or bung." On the other end of the foundation plate is a standard "which acts on its own axis," and in the middle of the plate "near one end of the said ribs is a corresponding standard." Near the ribs is a long bar which traverses forward and then backward; on it are fixed two clamps which carry a knife between them. On the plate are three brackets, each bearing a wheel or roller for keeping the knife edge in cutting order; and at one end of the plate two brackets through which a slide passes with clamps or cork holders attached to it.

[Printed, 4d. No Drawings.]

A.D. 1863, November 9.—N<sup>o</sup> 2784.

THOMPSON, NATHAN. — "Improvements in apparatus for " stopping bottles and other vessels." This invention consists in improvements on former inventions for which Mr. T. obtained letters patent, "where a cap is employed which carries a screw, " and this presses down on to the mouth of the bottle a plate " of metal or other rigid material having on the under side a " layer of cork or similar soft substance."

Heretofore the cork was attached by cement; now it is retained " by means of a disc of woven or other fabric or parchment, " which is placed over the cork." The fabric, the cork, a disc of thin metal, and the plate (which is somewhat smaller than the disc) "are put together in a manner similar to that " in which covered buttons are made, by dies and pressure."

Another improvement consists in furnishing the screw which presses down the plate with a lug; this is jointed to the top of the screw "so that it can be folded down flat out of the way " when not in use."

Another improvement relates to the construction of the cap which carries the screw :—Instead of making the nut in a separate piece the screw thread is produced in the thin sheet metal. By aid of a suitable tool the metal (which would otherwise be removed to form the hole) is forced down and forms “a flange around it projecting inwards;” the screw thread is cut in the flange.

[Printed, 6d. Drawing.]

A.D. 1863, November 14.—N<sup>o</sup> 2849.

**BARKER, GEORGE.** — “Improvements in the construction of “syphons for taking off liquid sewerage, overflow of rivers, and “other like purposes.” The syphon for carrying off sewerage, &c. is “turned up at each end,” or each end is “conducted straight into a tank;” it is “set at even levels,” so that it “may be said to be self-containing.” When the liquid in the tank “rises above the level of the bent end,” it “passes up the syphon, “traverses its pipe, and escapes out at the other end” into a receptacle provided with an overflow.

“For taking off the overflow of rivers” the syphon has at each end a slide valve “for stopping the action when required;” the valves are raised and lowered by handles, nuts, and screws, or by racks and pinions. To fill the syphon at the commencement “a force and suction pump” forces water through pipes “into the top of the syphon until it is full,” or a reservoir situate higher than the syphon may be used. In case of leakage a “high-pressure pipe” is attached “to the bottom of the syphon at the valve or any other part.”

“For taking off water from a reservoir on the top of one mountain to a reservoir on the top of another,” the water descends one pipe into a “sediment reservoir,” and thence ascends another pipe. A valve is applied at each end of each pipe, and “an air-pipe to be used when filling the syphon” rises up from the sediment reservoir.

**Apparatus for filling bottles:**—The tap through which the liquid flows into a trough has a plug in which is “a long narrow “opening,” so that “a slight rotatory motion” (controlled by a ball) “gives a large passage for the fluid.” The liquid passes up pipes into horizontal pipes and through taps upon which other pipes swivel. The bottles are raised up to the swivelling pipes;



and the ball is so adjusted as "to cut off the liquid when the level in the tank is at a certain height."

"A syphon for a drinking or other fountain:"—"The end of a self-containing syphon" dips into a reservoir; the syphon is supported on a pivot;" the top of the bend at the outer end is at the same level or a little above that of the water" in the reservoir; on depressing this end "the water immediately commences to flow."

A "self-containing syphon" for "filling one barrel from another:"—The legs are stopped at bottom; an opening is made in each "a little way up," and "a partition is put therein;" by this means "the syphon is made self-containing and can be hung up or put aside and be always ready for use."

[Printed, 1s. 2d. Drawings.]

A.D. 1863, November 19.—No 2905.

COLYER, JOSEPH.—"Improvements in the mode of and apparatus for stopping or closing orifices in casks and other vessels." A "shallow recess" is hollowed out in the part to which the stopping apparatus is to be applied, and a bung-hole is cut at one end of the recess. A metal frame is screwed on round the recess; its inner edge projects over the recess so that the space between them forms a guide for a stopping-piece which slides therein. The stopping-piece is a metal plate or cap grooved to receive a caoutchouc packing ring or washer; its neck or lower part fits the hole, but its upper surface is of larger diameter. This piece is fastened when in the bung-hole by means of a bar "fitted on the flanged shank of a nut working on a screw attached to the cap." The bar has parts cut away at its ends; these by "working the nut upward to raise the bar" are jammed against the under surface of the frame. A hole closed by a screw cap is formed in the stopping-piece; it serves as a vent-hole, and a pipe furnished with a tap is screwed into it when required.

Various arrangements for tightening the stopping-piece are described. In one an eccentric is used; in a second a bolt worked by a knob; in a third nuts work on threaded studs fixed on the cap; in a fourth the tightening parts consisting of eccentrics or cams are on the frame; in a fifth the ends of a spring bear against the under surface of the frame; in a sixth "an oval frame" is used having on its under surface "a circular rim."

The vent-hole may be made in another part of the vessel; it is fitted with a pipe threaded on the inside for the reception of a screw-plug.

Two figures show "a hollow revolving cutting tool" for cutting the recess and the bung-hole.

[Printed, 10d. Drawing.]

A.D. 1863, December 8.—N° 3099. (\* \*)

NEWTON, ALFRED VINCENT.—(*A communication from Anton Courlander Crondal.*)—(*Provisional protection only.*)—"Improve-  
ments in the mode of and apparatus for preparing cork stuffing  
for mattresses, pillows, cushions, and other articles, and in the  
mode of applying the cork stuffing thereto." Cork waste is  
ground up into pieces "about the size of a pea;" it is put into a  
tank which has "a moveable or piston head." Oil is poured in  
and forced into the pores. When the cork is thoroughly impreg-  
nated, it is taken out and placed in a cylinder "provided with  
beaters, which, by rotating, agitate the cork and speedily cause  
it to dry;" it is now ready for use.

[Printed, 4d. No Drawings.]

A.D. 1863, December 19.—N° 3206.

GEDGE, WILLIAM EDWARD.—(*A communication from Clément Laburthe.*)—"Improved apparatus for racking and decanting  
liquids (termed 'Laburthe's apparatus')." This apparatus is  
applicable (1) "to racking off liquids by the bung-hole;" (2) "to  
tunning wines by taking the liquid from the vase or basin at  
the foot of the vat or vintage tub and conducting it into the  
vessels which are to receive it;" and (3) to "raise and conduct  
uncovered liquids such as water from the sea, rivers, canals,  
wells, or cisterns."

The apparatus for the first two purposes is composed of (1) a  
pneumatic pump; (2) a caoutchouc tube; (3) a hollow bung or  
conical elbow; and (4) a siphon. The tube is connected to the  
pump and to the bung; it has at each end a valve to prevent  
the return of air. The bung is of metal; it is screwed into the  
vessel to be emptied. One end of the siphon enters the bung,  
the other the empty vessel; the siphon is provided with a length-  
ening tube "when it is desired to leave the lees or residue."

"The air compressing the liquid, this latter is forced to escape by the siphon."

[Printed, 8d. Drawing.]

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1864.

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A.D. 1864, January 14.—N° 106.

THOMPSON, NATHAN. — "Improvements in apparatus for stopping bottles, jars, and other vessels, which improvements are also applicable to stopping the muzzles of fire-arms." This invention is an improvement on the one for which Letters Patent were granted to Mr. Thompson dated 9th September 1863, No. 2223. The stopper was composed of two discs drawn towards each other by a screw working in a right-hand threaded nut in the one disc and in a left-hand threaded nut in the other, and thereby compressing a vulcanized india-rubber ring between the discs and causing it to protrude beyond them. Only the lower disc entered the vessel, and the discs were prevented from turning by means of pins and slots in tubes attached to the discs.

In the present invention both discs enter freely the mouth of the vessel, and the upper end of the screw is connected to another disc of slightly larger diameter than the mouth. On the upper surface of this disc is a metal flap hinged to it, "and the disc is dished inwards so as to form a recess for the flap to lie in." When the flap is turned up, it serves as a handle wherewith to turn the screw. To prevent the compressing discs from turning a string or wire is connected to the upper one, "and previously to turning the screw the string or wire is laid in a notch or passed through a hole on the top of the bottle and is there held."

If the bottle contains "fluids under pressure," either of the compressing discs is made "with projecting lugs which are to pass under lugs on the mouth."

Slight modifications of the foregoing arrangements are described.

Another part of the invention consists in fixing a hollow screw in the topmost disc; the screw is cut externally and internally with a thread "in opposite directions;" the external thread "works in a nut carried on the under side of the upper disc, and



"from the under disc a screw projects which works in the "internal thread." The screw of the under disc is prevented from turning "by two of its sides being formed flat;" it passes through a plate having a corresponding hole through it and "fixed to the under side of the nut carried by the upper disc."

In the specification of the former patent a stopper was described having only one disc; this was divided radially into parts which were expanded "by two nuts formed with inclined sides." In the present invention an upper disc (as before described) is placed on the head of the screw which works the nuts.

Sometimes the segmented disc is expanded by only one nut. The screw is secured at bottom to a plate recessed in the middle, and is riveted at top to the upper disc (described before); it can turn independently of its plate. Above the segments is a metal ring connected to the plate by pins that pass through slots in the segments. The outer ends of the segments "are turned "up at right angles to receive the ring" of india-rubber.

[Printed, 10d. Drawing.]

A.D. 1864, January 22.—N<sup>o</sup> 173.

WOODMAN, CHARLES TODD.—"A new and useful improvement in closing bottles, jars, faucets, and stop-cocks." The bottom of the neck is made with a seat for the reception of "a loosely fitting elastic globular body." The upper part of the neck is made internally with a screw thread in which a screw stopper works. The bottom of the stopper may be "convex, flat, "or concave;" it presses against the ball with force sufficient to keep the contents of the bottle, barrel, &c., air-tight. The portion of the neck between the screw and the seat is "smooth "and round," so that the ball "may play with freedom in it" when released from the pressure of the stopper. Above the seat in the neck is "a lateral outlet." When the stopper is turned back, the pressure of the liquid causes the ball to move from its seat, "leaving a round unbroken passage for the flow of the "liquid."

In a faucet or stop-cock the parts mentioned above are placed at the outer end of "the round induction pipe." There may be a washer or packing to secure an air-tight connection between the stopper and the outer end of the neck or chamber. The outer end of the lateral outlet or "eduction pipe" may have an

external screw thread "for the purpose of attaching a hose or filter."

In jars and cans the outlet may be dispensed with.

[Printed, 8d. Drawing.]

A.D. 1864, January 22.—N<sup>o</sup> 179.

MCADAM, WILLIAM.—"Improvements in stoppers and bungs for closing bottles and casks and other receptacles, and in the machinery or apparatus employed in the manufacture of the same." These stoppers and bungs are made of "granulated, powdered, or reduced cork, or other light and partially elastic material in combination with caoutchouc or india-rubber." The substitutes for cork mentioned are "very light woods, sawdust, waste fibrous substances of various kinds;" for caoutchouc "glutinous or other adhesive matters," marine glue, or gums of various kinds may be used.

Waste portions of cork are reduced to very fine particles and incorporated with a solution of caoutchouc. The combined substance may be made into corks or bungs by any convenient process. The patentee describes several methods of manufacture but does not claim any.

The corks and bungs are dipped into a solution which "prevents any injurious action from taking place between the stopper and the liquids or other substances contained in the vessels."

[Printed, 4d. No Drawings.]

A.D. 1864, January 26.—N<sup>o</sup> 225.

JOHNSON, JOHN HENRY.—(*A communication from Edward Hamilton.*)—"Improvements in stopping bottles containing aerated liquids." The stopper employed is a ball "of any suitable light elastic substance, vulcanized india-rubber being preferred;" the ball or stopper is either hollow or solid, "but when solid, its interior should be of a light spongy texture and be surrounded externally by a smooth skin or covering." It is forced into the interior of the bottle before charging with liquid, "and should fit the neck sufficiently tight to require more force to introduce it into the bottle than will be exerted upon it by the pressure of the gas or fixed air when the bottle is charged."

If the neck be wide enough the stopper may be pushed from its seat "by the direct pressure of the finger." Or a plug may be employed furnished with a cap, "which closes down upon the bottle neck after the stopper is unseated and confines the liquid until released by relaxing the pressure thereon;" there may be a packing on the under side of the cap. Or a tube may be used provided with a collar "covered or not with india-rubber and made to fit inside the neck." Rings are attached to the tube, "extending laterally and downwards so as to be conveniently seized by two fingers of the hand," and the inner end of the tube is perforated to allow of the escape of the liquid, &c., when the inner end has been forced inwards sufficiently to displace the stopper. The collar may be fixed to the tube and slide down with it; or it may be stationary inside the neck, and the tube may slide through it.

[Printed, 8d. Drawing.]

A.D. 1864, February 2.—N° 276. (\* \*)

CASTLE, WILLIAM HENRY BALDWIN.—(*Provisional protection only*).—"A new or improved composition for coating and insulating metals, wood, cork, and other materials." The invention consists in the employment of a composition for coating and insulating metals, wood, cork, and other materials, consisting of gutta percha, india-rubber, or other analogous gums or compounds thereof, held in solution by the admixture of chloroform in the proportions of about one pound of gutta percha to one gallon of chloroform. It is preferred to add to this a small proportion of turpentine, say about one-sixth part of the volume of the chloroform employed, whereby the evaporation of the volatile constituents is sufficiently retarded.

"When this composition is applied as a coating to the sides and bottoms of iron ships, and in other cases where it is in exposed positions subject to the action of the atmosphere, water, or other fluids or gases, I prefer to cover the coating with a layer of paint composed by preference of red lead, arsenic, and bichloride of mercury, but any other suitable paint may be employed. When the surfaces to which the composition is to be applied are of a smooth nature, I prefer to roughen the same in order to cause the composition to adhere more firmly thereto."

[Printed, 4d. No Drawings.]

A.D. 1864, February 19.—N<sup>o</sup> 431.

CHIDLEY, JOHN JAMES.—(*Provisional protection only.*)—"An improved method of stoppering or rendering air-tight bottles "and jars." The neck is made with two or three studs inside "about  $\frac{3}{8}$ ths of an inch from the top and at equal distances "apart." The stopper is about an inch long, and at its lower end are grooves corresponding to the studs, "perpendicular at their "opening," ascending "about  $\frac{1}{4}$ th of an inch," and then going round the stopper "on a slight incline upwards so as to become "like a screw thread." The top of the stopper has "a flat rim "or flange on its under surface, on which is placed a washer of "cork or other suitable material."

If a cap is preferred, the studs are on the outside of the neck, the grooves are on the inside of the cap, and the washer is inside the top of the cap.

[Printed, 4d. No Drawings.]

A.D. 1864, February 26.—N<sup>o</sup> 480.

HULL, CHARLES.—(*Partly a communication from Gustave Böhm.*)—"Improvements in corkscrews." Two arrangements are described.

In the first the stem of the worm "works loosely in a hole in "the top of the barrel of the corkscrew." The upper portion of the stem is slotted "and constitutes a fork" in which "a heart-shaped plate works." This plate turns on a pin which passes through a slot, thereby allowing the plate some play "both in a "horizontal and vertical direction." A rod whose upper end is made into a handle is riveted to the top of the plate. The other end of the rod has a projection which fits into a recess in the top of the stem, so that the two can engage rigidly together. The two are in this position when the worm is turned into the cork; they are then disengaged and the plate acts as a lever, its lower end bearing on the top of the barrel to draw out the cork.

In the second the worm, stem, and barrel work as in the former case. A handle is fixed on to the top of the stem, and a lever is jointed at one end to a square boss or shoulder on the stem immediately below the handle. The stem can rotate in the boss. The inner portion of the lever "is made into a fork, the said "forked portion having nearly the figure of a quadrant." On the nozzle of the barrel is a guide or T piece through which the

forked portion of the lever works. The cork is drawn out by depressing the free end of the lever. The "quadrant portion of the lever may work against an anti-friction roller on the top of the barrel."

[Printed, 1s. Drawings.]

A.D. 1864, March 4.—N° 551. (\* \*)

BOURNE, STEPHEN. — "Improvements in casks and other vessels for containing beer and other liquids that are injured when exposed to atmospheric air." These are, "applying a flexible diaphragm or partition within a cask or vessel, such diaphragm or partition" being "connected at its edges to the centre of the sides of the vessel;" it is of such a form that it can alternately either fit closely the interior of one compartment or the other. The bottom compartment is furnished with a cock. The top or upper compartment has a hole for air to enter freely. "The liquid to be preserved in the cask or vessel is supplied to the lower compartment either through the tap or otherwise." "In drawing off the liquid the tap or other orifice in the lower compartment is opened, and the air pressing on the top of the partition causes the partition to descend and the fluid to escape;" or the partition might be weighted, or the vessel tilted for the same purpose."

[Printed, 4d. No Drawings.]

A.D. 1864, March 9.—N° 588.

SPIERS, FELIX, and POND, CHRISTOPHER.—(*A communication from Barlow William Mallam.*)—"Improvements in closing or stoppering bottles." This stopper is self-acting. A metal or other tube is made with two flanges; the lower one rests on the mouth of the bottle neck, and below this flange "the tube is set in cork" which fits securely into the neck. On the upper flange are fixed "four vertical wires" forming two arches, and within these guide wires a ball of glass, crystal, or other suitable material is adjusted.

"When the decanter is at rest, the ball will fall into its seat on the upper flange and close the bottle," but when the decanter is tilted, the ball will roll from its seat, and the liquid will flow through the tube."

[Printed, 6d. Drawing.]

A.D. 1864, March 9.—N° 594.

THOMPSON, NATHAN.—“Improvements in apparatus for “stopping bottles, jars, and other vessels, which improvements “are also applicable to stopping the muzzles of fire-arms.” In the specifications of letters patent granted to Mr. Thompson, bearing date 9th September 1863, N° 2223, and 14th January 1864, N° 106, “were described various modes of constructing “stoppers,” in which the stopper is made to fit within the mouth of the vessel “by expanding a ring of vulcanized india-rubber or “other material placed around its circumference.” In one arrangement the ring “was placed around a short tube projecting “from the under side of a disc that was of larger diameter than “the mouth ” and it was expanded “by another disc being drawn “by a screw towards the first-mentioned disc and so compressing “the ring ” between them. “The lower disc was provided with “a short tube on its upper surface that could slide within the “tube of the upper disc.”

In the present arrangement the upper end of the upper tube is formed with a projecting flange of larger diameter than the mouth of the vessel. The lower end of the lower tube is also formed with an exterior flange around its bottom edge; the lower edge of the ring rests on this flange, and when the flanges are drawn together by the screw the ring is expanded. The lower tube is closed at top by a disc which carries a nut for the screw to work in, and at bottom by a metal cap or a disc of any suitable material. The flange on the upper tube “is for a portion of its width dished “or recessed inwards,” and in the recess lies the outer edge of a disc connected to the upper end of the screw. This disc “has “hinged to the centre of its upper surface” a flap, which when turned up serves as a handle for turning the screw, and when turned down lies in a recess formed for it in the disc.

Figures 10 and 11 in the sheet of drawings show “a jar having “stopping apparatus applied to it, which is a slight modification” of the foregoing arrangement, “the difference being only in the “detail of the form of the parts.”

The patentee describes his method of making the screw, the tubes and flanges, the nut and the flap.

[Printed, 10*d*. Drawing.]

A.D. 1864, April 13.—N° 931.

NEILSON, JAMES, and GILLIES, JAMES.—“Improvements in “apparatus for fixing or closing capsules on bottles and other

"vessels." The apparatus stands on a table fitted with bearings which carry a tubular shaft. On the shaft are fast and loose pulleys to receive a driving belt; and on the front end is a chuck "containing a pair of narrow burnishing dies." The chuck "consists of two brass rings shaped so as when put together to have internally a narrow annular space between them" for the reception of the dies; it is fixed by screw studs upon a disc flange formed upon the front end of the shaft. The centrifugal force which the rotation gives to the dies "causes them to move from the centre when they are free to do so;" but when the bottle neck with a capsule on it is inserted "they are forced inwards by the action of a pair of levers." The levers are jointed to the flange and act on the dies by a cord, "which passes out through slots cut in the edge of the chuck, and is attached to the ends of the levers." The outward movement of the levers causes the loop formed by the cord to press the dies inwards. The centrifugal force of the levers overcomes that of the dies, so that the dies press upon the capsule and contract and close it "with a burnishing action." When the bottle neck is being inserted or withdrawn, the action of the levers is restrained by a sliding collar and ring which are worked by a stirrup lever or treadle; this lever has a blade spring applied to it "to recover it after each action." Within the shaft is a solid spindle, which does not turn but is pressed forward by a coiled spring; and on the front end is a cup lined with elastic material, which holds the capsule and prevents it "from being turned round by the frictional burnishing action of the dies."

"The dies may be actuated in various ways," and the other details of the apparatus "may obviously be modified."

[Printed, 10d. Drawing.]

A.D. 1864, April 15.—N° 953.

JOHNSON, JOHN HENRY.—(*A communication from William Betts.*)—"Improvements in metallic capsules." This invention relates "to the application of trade marks" to capsules, and by means thereof the patentee is enabled "to produce trade marks or other devices in three or more different colors on the same capsule."

He describes his invention "in applying a three-color mark:"—The embossing die "is the ordinary die having the name and trade mark sunk or engraved thereon in intaglio." He colours

"that portion of the end of the capsule in red where the trade mark is to be embossed," and that portion where the name is to be embossed in yellow. Before bringing the capsule and die into contact he coats "the plain surface of the die with blue or any good thick body color," which will contrast favorably with the red and yellow. "If the ground be required to be bronzed or silvered," he coats the surface "with any suitable adhesive varnish." He then stamps the capsule, "the effect being to raise or emboss the name and trade mark and to simultaneously transfer" the third color or the varnish "to the ground or unraised surface of the capsule." If varnish has been used metallic powder must be sprinkled over it while it is wet.

"It is obvious that any number of different colors may be employed and distributed over various parts of the end of the capsule."

[Printed, 6d. Drawing.]

A.D. 1864, May 4.—N<sup>o</sup> 1128.

THOMPSON, JOHN.—"Improvements in apparatus for securing stoppers in bottles." The object of this invention is to prevent chemists in dispensing from making "dangerous mistakes by accidentally taking bottles containing poisons when other preparations are required."

A cap of metal or other material is employed; it has a lug projecting downwards on one side, through which a binding screw passes; it has also a lip turned down on the opposite side, "or it may be all round if desired." In the middle of the cap "is a hole for the top or square of the stopper to pass through, but this hole is not of such a size as to allow the cone of the stopper to pass." When the cap "is dropped over the stopper" the lip passes below the flange round the neck of the bottle, and the screw when screwed inwards also passes under the flange; the inner end of the screw "receives a small leathern or padded button" to prevent breakage of the bottle.

There may be various modifications of the foregoing arrangement. Claws may be substituted for the lip; the shape of the cap may be varied; and a spring or other catch may be used instead of the screw. The annexed sheet of drawings exhibits several of these modifications.

[Printed, 10d. Drawing.]



A.D. 1864, May 5.—N° 1133.

DAVIES, WILLIAM, CATE, GEORGE, and CATE, WILLIAM.—(*Complete Specification, but no Letters Patent.*)—"Improvements " in machinery for cutting corks, bungs, gun-wads, and other " similar articles." A straight knife is clamped to a bar which slides in guides on the bed plate of the machine. The bar is moved to and fro by a handle; its other end is fixed to a slide which moves on longitudinal ribs on the bed plate. Between the ribs is mounted a long roller with "a right and left handed " groove cut therein," into which a projection from the slide enters. Each groove "makes half a turn in the whole length " of the roller," so that a drawing forward and backward of the slide causes the roller "to make a perfect revolution on its axis." The roller is fixed on and gives motion to a shaft which carries at its other end a disc with a pointed face. Opposite the disc is a similar one at one end of a square shaft which slides in adjustable brackets. The sliding of the square shaft is effected by a lever having a handle at one end, and at the other a fork which embraces a pin on the shaft. A gauge in front of the knife sets the cork quarter truly in position. The knife is kept sharp by rollers of emery or other suitable material "placed in various " parts of the stroke." When it is desired to cut oval corks, the discs are made of an oval form. To cut corks "taper from " end to end " the knife is fixed at an angle to the quarter, for which purpose the knife bar guides are adjustable by set screws and clamping nuts; this arrangement enables the machine also to cut various sizes of corks.

The roller may be made with a projection, and the groove may be formed in the slide. Sometimes a small fly wheel is employed.

[Printed, 10d. Drawing.]

A.D. 1864, May 10.—N° 1187.

THOMPSON, NATHAN.—(*Provisional protection only.*)—"Improvements in apparatus for stopping bottles, jars, and other " vessels." This invention applies to that class of stopping apparatus "in which a ring of india-rubber is used," and where the ring "is compressed by a screw and cone or otherwise so as " to squeeze it outwards."

The inventor, finding that the contents of the bottle, &c., especially if of an oily nature, are liable to injure the india-rubber," prevents the contents from coming into contact with the rubber "by covering the bottom and sides of the stopping apparatus with a tin or other thin metal capsule." This capsule "is sufficiently elastic to expand and contract with the india-rubber within" without interfering with the working of the apparatus.

"A capsule of thin gutta percha or other impermeable material may in many cases be advantageously employed" instead of a metal capsule.

[Printed, 4d. No Drawings.]

A.D. 1864, May 27.—N° 1321.

HART, WILLIAM.—(*Provisional protection only*).—"Improved treddle motion arrangements, more especially applicable to the operations of bottle-washing, and of twisting the wire for wiring the corks of bottles." The treadle is connected to an upright rod which passes through guides into a case or frame. The upper end of the rod is connected to an india-rubber or other spring which is secured to the top of the case. A similar spring descends from the top of the case and is united at its lower end to a cord which is wound round an axle. The axle carries a socket holder for a bottle brush or a wire-twisting instrument. This wire-twister "consists of two tubes side by side for the insertion of the two ends and lengths of a doubled wire."

"A toothed wheel and racks could be substituted for the above."

[Printed, 4d. No Drawings.]

A.D. 1864, June 9.—N° 1430.

SMITH, MICHAEL, and SMITH, JOHN.—(*Provisional protection only*).—"Improvements in corking bottles, and the machinery or apparatus applicable thereto." Two sides are securely fixed to an oblong or square frame of metal or wood. A convenient number of pistons "made so as to pass through the under part of the frame," have attached to them "cranks having knee joints in the centre." The upper ends of the cranks move in the top part of the frame. "To one end of each piston is attached an arm," which serves as a guide to each and "works or passes through a slip of iron or wood fastened to each side of the

" frame." The slip " passes through the cranks and causes the " guide to work in a perpendicular motion." Under the frame is a cross piece wherein are flanged tubes to receive the corks ; the cross piece " moves up and down so as to come exactly under the " ends of the pistons." The cranks are connected at the joints by a slip of iron or other material ; one end of the slip is attached to a spring on the left side of the frame, the other to a lever or screw on the right side, so that the cranks have an " oscillating " motion, which forces the pistons into the tubes containing the " corks, and thereby forces the corks into the bottles." Under the cross piece is a platform moveable up and down by a foot lever, and on it is placed a box divided into as many compartments for bottles as there are pistons.

[Printed, 4d. No Drawings.]

A.D. 1864, June 21.—N° 1543.

DIXON, THOMAS OGDEN.—" Improvements in stoppers for " bottles, jars, and similar articles, and in means or apparatus " for withdrawing such stoppers from bottles, jars, and similar " articles." The stopper is composed of a screw plug of wood or other material and " an ordinary cork which is bored out for the " purpose." The plug is screwed into the cork and secured thereon by glue or cement. The head of the plug is made large enough to form a cap to the bottle, &c. The stopper may be " suitable for a sucking bottle " by boring a hole through it for the reception of a tube.

The instrument for drawing out these stoppers is composed of two levers connected by a pair of links ; the jaw of the upper lever fits the bottle neck under the cap, and the jaw of the lower one rests on the shoulder of the bottle. Or it may consist of a handle fixed on a screwed spindle, whose top jaw clips the handle between two collars. The screw of the spindle fits into a screw box which forms part of the lower jaw. The jaws are forced asunder by turning the handle. The top jaw of the latter instrument is made in two parts capable of adjustment to the size of the bottle neck by means of screws.

[Printed, 8d. Drawing.]

A.D. 1864, July 1.—N° 1648.

ELLIS, JOSEPH, and ADAMS, JAMES.—" Improvements in " apparatus used when decanting wine and other liquids." " The

"fore end of the tray" wherein the bottle is placed is notched out to receive the bottle neck. The tray "turns at its fore end" on pins and "has at its back end a stem" at the top of which is a handle. The stem "is part of a circle struck from the centre of the axis or hinge on which the fore end of the tray is arranged to move;" it moves between guides carried by the back of the frame. Between the guides are "two pairs of wedges," an outer pair connected to a slide which slides on a rod, and an inner pair connected to another slide that slides on the same rod. The slide which acts on the outer pair is pressed upwards by a spring; the other slide is pressed downwards by a spring; the force of each spring is regulated by a screw. In each of the inner wedges is formed a recess for the reception of a roller, against which an outer wedge works. "The bottom guide" limits the movement of the outer wedges, and the movement of the inner wedges is limited by their slide coming against a shoulder on the rod.

When the handle is raised to pour wine from the bottle, "the friction between the stem and the wedges tends to draw the wedges apart, but if the stem is moved in the opposite direction, the wedges move towards each other, and nip the stem more tightly, and so retain the tray at any required angle."

[Printed, 10d. Drawing.]

A.D. 1864, July 1.—N<sup>o</sup> 1650.

TEMPLEMORE, ELTON.—(*Provisional protection only*).—"Improvements in apparatus for temporarily securing corks in soda water and other bottles containing fluid and air or gases under pressure, which is also applicable for carrying bottles and other articles." This apparatus consists of two straps with buckles, the one being at right angles to the other. One strap passes round the bottle neck and is buckled tight thereon. One end of the other strap is fixed across the neck strap or slides thereon with a loop; this strap passes over the cork; its buckle is fixed to a tab fastened to the neck strap or looped thereto.

For carrying bottles the strap which passes over the cork "is left of considerable length, and being attached at one end and buckled at the other, the intermediate double forms a loop convenient to hold." Or the cork strap may return over the cork in the form of a loop and be fastened to a second buckle on the neck strap.

[Printed, 4d. No Drawings.]

A.D. 1864, August 6.—N° 1955.

TAYLOR, WILLIAM ROWLAND.—“Improvements in casks for wine, spirits, beer, and other liquids, and in implements to be used for inserting pegs in casks, or removing shives and bungs therefrom.”

First improvement :—“The application of separate and distinct peg holes of wood, metal, or other suitable material,” instead of “having the stave perforated at different places.” The peg hole, “either slightly tapered or of equal diameter throughout,” is screwed into the bung stave or is secured by an internal nut; in the latter case the top is made with a flange.

Second :—The use of “conical and double tapered peg holes,” either in the stave or the bung, or a separate moveable socket. The hole is narrowest in the middle; in the under portion is fitted a peg; or the lower portion is stopped with gypsum; either is displaced “by the pressure of the ordinary wooden peg.”

Third :—“Self-acting internal valves for closing the peg and tap holes.” The valve in the peg hole will open “when a vacuum is formed in the cask by the stroke of a beer engine.” Again, the common peg placed in the peg hole “when pressed will allow sufficient air to enter.” When the pressure is removed, “the valve will always close.” The valve in the tap hole is opened by the insertion of the tap, and is shut by a spring when the tap is removed.

Fourth :—“Metal shive holes, combined or not in one piece with a metal peg hole.” The shive hole is fixed to the bung stave by a hollow bolt and internal nut, the bolt “answering as a peg hole.”

Fifth :—“The use of shives or bungs provided with peg holes, and covered or not with a label or canvas.” The covering prevents fraud, as it “must be destroyed before the peg can be forced inside.”

Sixth :—“The introduction of pegs into their holes from the interior of casks, and the peculiar instrument employed therefor.” The instrument (a bent lever with a projection which serves as a fulcrum) “is introduced through the bung-hole;” it is provided at one end with a socket and support for carrying the peg to be inserted.

Seventh :—“An implement for extracting shives from casks, and for assisting in removing the screw therefrom after their

"extraction." A screw is inserted into the shive; one end of a bent lever seizes hold of the screw-head; the cask serves as a fulcrum; and the depression of the other end draws out the shive. To take out the screw from the shive the lever is provided on one side "with two pins" or "two knife-edged projections," against which "the shive is pressed by one hand," whilst the other hand "unscrews the screw."

[Printed, *sz.* Drawing.]

A.D. 1864, September 28.—No 2385.

THOMPSON, NATHAN.—"Improvements in stoppers for bottles "and other vessels." In the specifications of letters patent granted to Mr. Thompson, and dated September 9th, 1863, No. 2223, January 14th, 1864, No. 106, and March 9th, 1864, No. 594, stoppers are described in which the compression is made by a screw acting on a ring of vulcanized india-rubber. In the present invention "a turn button acting with inclines" is substituted for the screw.

The construction of the stopper is as follows:—The upper end of the rubber is supported by "a ring stamped in sheet metal." A portion of the ring "is cylindrical and fits loosely into the "mouth of the bottle." At the upper edge of this portion is a flange projecting outwards and resting on the top of the neck; the lower portion has a flange projecting inwards, and against this the upper edge of the rubber rests. The edge of the latter flange "is again turned downwards," the better to retain the rubber in place, and "to guide the part which supports the lower "edge" of the rubber. This part, "also stamped in sheet "metal," consists of a cylinder "fitting and sliding within the "lower end" of the first part; at its lower edge is a flange projecting outwards and supporting the lower end of the rubber. Within the cylinder are inclines "formed conveniently for bending "the metal inwards," one for each end of the turn button, and at the ends of the inclines are stops. The button may be made with more than two arms, the number of inclines being similarly increased. The button is fixed to a disc, which lies in a recess in the top flange, and has a flap hinged to it for turning the button; the flap folds down flat, so that the whole makes "one "flat or nearly flat surface."

In "very inexpensive" stoppers the rubber ring is not employed; a cork is fastened to a disc or cap "with a flap hinged

“ or jointed to it to serve as a handle for withdrawing the stopper.”

[Printed, 8d. Drawings.]

A.D. 1864, October 14.—N° 2531. (\* \*)

COOKE, JOHN.—(*Provisional protection only.*)—“ Improvements in catches or fasteners, which may be adapted to portable or pocket ink bottles or other similar articles.” The improvements consist in the use of an additional catch so arranged “ as to lock with that on the ink bottle or box, and thus prevent its becoming accidentally opened.” The usual aperture made for the reception of the hasp is carried right through the lid of the box, and it is “ up and down this opening ” that the catch is applied. The catch is raised from the lid by an upward pressure of the thumb, and then the ink bottle can be opened in the usual way by pressing on the hasp. The above arrangement can be applied to purses, portmonnaies, and other similar articles.

[Printed, 4d. No Drawings.]

A.D. 1864, October 18.—N° 2573.

THOMPSON, NATHAN.—(*Provisional protection only.*)—“ Improvements in stoppers for bottles, jars, and other vessels, and in stoppers for the muzzles of fire-arms.” This stopper is composed of a cork and a metal head which is connected to the upper end of the cork in the following manner :—A hole is bored partly through the cork from the upper end. The lower end is forced through a conical ring of metal, and when the greater portion of the length has been forced through the ring, the remaining portion is expanded and caused to fit within the ring “ by driving a rod or screw (by preference of wood) into the hole.” The rod or screw “ has at its upper end a conical head formed on it; ” it is secured in the hole by cement. A covering of soft leather may be put round the cork before forcing it through the ring. “ To the conical ring so attached to the cork heads or tops of various descriptions may be connected in various ways.”

Bottles for such stoppers are made (by preference) “ conical at the mouth to receive the conical ring,” and below the conical portion “ parallel to receive the cork of the stopper.”

[Printed, 4d. No Drawings.]



A.D. 1864, October 25.—N° 2641.

TAYLOR, EDWARD HENRY.—(*Provisional protection only.*)—

“Improved apparatus for drawing off or emptying the contents of  
“casks, ships’ tanks, and other vessels containing petroleum,  
“paraffin, and other matters or liquids, and also the application  
“of similar apparatus for the supply and stoppage of air.” A  
flanged tube is fixed to some convenient part of the cask, &c.;  
the tube projects into the cask, and “its interior is screwed as a  
“nut.” Into the screwed part is screwed “a tubular plug open  
“at the front and closed at the back;” in the body of the plug  
near the back are perforations, and “at the front end two or more  
“notches or recesses.” One end of the discharge pipe is screwed  
to correspond with the interior of the tube, and the extreme end  
has projections corresponding to the notches. When in use, the  
projections enter the notches and the end of the pipe is screwed  
into the tube; “as the projections and notches move together,  
“the plug is unscrewed from the tube, thereby allowing the per-  
“forations to be open to the contents of the vessel, which then  
“escape through the interior of the plug to the tap or pipe.”  
When the pipe is unscrewed, it at the same time “turns the plug  
“and draws it into the tube and closes the perforations so as to  
“make the vessel perfectly tight.”

“Vents formed in a similar manner” may be used “for supply-  
“ing and shutting off air to the vessels.”

[Printed, 4d. No Drawings.]

A.D. 1864, October 26.—N° 2658.

MAY, CHARLES.—“Improvements in lock fastenings for smelling  
“and other bottles, and in the means employed in combination  
“therewith for closing the same.” The catch or bolt is arranged  
“to move sideways” through a recess “cut in the inner flanch  
“of the cover.” The ornamental stud or plate, attached to the  
catch and serving to release it, moves to and fro “in a slot formed  
“in the collar of the mount.” One end of a curved spring is  
fixed to the catch, the other end “to a flanch on the interior of  
“the mount.” When the stud is pressed sideways to release  
the catch, the spring moves in a circular recess made “by the  
“metal mount forming a collar around the neck of the bottle.”

A disc of cork is placed within the cover of the mount “in  
“front of a disc of glass or metal which is acted upon by a spiral



" spring at the back, as is well understood;" it serves to close the mouth more perfectly than the ordinary ground glass disc.

[Printed, 6d. Drawing.]

A.D. 1864, October 29.—N° 2686.

DEVEREUX, GEORGE HENRY.—" Improvements in syphons." These syphons are rendered "self-acting" by making "the descending leg telescopic."

The upper portion of the descending leg "is made in one piece with the ascending leg;" a packed piston is fixed to the lower end; the piston slides in a cylinder which has at its lower end a stop-cock and at its upper end a cap with a hole in its middle for the passage of the descending leg. If the ascending leg is immersed in liquid, the stop-cock closed, and the cylinder drawn down so as to lengthen the ascending leg, "a partial vacuum is formed in the part of the cylinder under the piston, and liquid will come up the ascending leg to supply it."

If it is required "that the liquid should be kept out of contact with the cylinder," the cylinder is fixed "on the upper part of the descending leg," and the lower part of the descending leg "is made to slide over the upper portion and within the cylinder." The piston is placed at the upper end and the stop-cock at the lower end of the sliding portion. The cylinder screws air-tight at top into a cap which is soldered to the leg, and it carries at bottom a cap through which the sliding portion passes freely. "The principle of action is the same in both cases."

[Printed, 8d. Drawing.]

A.D. 1864, November 3.—N° 2716.

DAVIES, WILLIAM, CATE, GEORGE, and CATE, WILLIAM.—"Improvements in machinery for cutting corks, bungs, gun wads, and other similar articles." The cutter is fastened between clamps to a bar which slides in guides on the bed plate of the machine. One end of the bar is secured to a slide "which slides on longitudinal ribs formed on the bed plate." Between the ribs is mounted a long roller "which has a right and left handed groove cut therein." A projection on the slide enters the groove, causing the roller to make half a revolution by the forward motion of the slide, and to complete the revolution by drawing the slide back again. The slide is moved by "a fake

" lever " furnished with a handle, and the movement of the slide causes the bar to move, carrying with it the cutter. The roller is fixed on, and gives motion to, a spindle which carries at its other end a disc armed with points. A square spindle sliding in adjustable brackets carries on its inner end a similar disc capable of revolving. The square of cork is held between the discs and by means of a handle which moves the square spindle and takes into one of the teeth of a rack. An adjustable gauge keeps the square " truly in position." In order that the corks may be taper from end to end, the cutter " is fixed at a greater or less angle " to the square, and the guides are capable of adjustment by means of set screws. The cutter edge is kept sharp by adjustable sharpening rollers. Sometimes a fly wheel is mounted at the outer end of the spindle of the roller.

[Printed, 10d. Drawing.]

A.D. 1864, November 3.—N<sup>o</sup> 2719.

GARTON, CHARLES, and HILL, THOMAS.—"Improvements in " brewing, fermenting, racking, and bottling, beer, ale, and " wine." This invention consists in "driving air attemperated " and purified " over the surface of liquors " under fermentation " or in the process of brewing," and in introducing such air into chambers " in which any brewing operation, racking, or bottling " is being carried on."

The air is attemperated and purified "by drawing or driving it " through charcoal or other porous material, by preference animal " charcoal, and by bringing it in contact with cooling or heating " media."

The patentees do not claim "any means of attemperating the " air."

[Printed, 4d. No Drawings.]

A.D. 1864, November 3.—N<sup>o</sup> 2722. (\* \*)

BREWER, EDWARD GRIFFITH.—(*A communication from Aibert Rittmeyer.*)—"Improvements in inkstands." The inkstand is composed of four principal parts; a base plate or foot, a bottom or case, an inside cover, and an outside cover. In the centre of the base plate is a spindle (provided with a handle) on which the other parts are mounted. The case contains three ink chambers; it is free to turn on the spindle. The inside cover is immovable on the spindle by means of a bayonet joint; it has one aperture

A.D. 1864, December 3.—N° 3010.

BEVAN, EDWARD, and FLEMING, ABEL.—(*Provisional protection only*).—"An improvement in the construction of bottles, " jars, and like vessels of capacity, and improved means for " securing or fastening corks and other stoppers therein." The bottles, &c. are constructed "with one or more small apertures" on opposite sides of the necks. After the cork has been forced into the neck in the usual way, it is further secured by passing a pin or its equivalent through both apertures and cork.

[Printed, 4d. No Drawings.]

A.D. 1864, December 22.—N° 3178. (\* \*)

EDMONDS, HENRY.—"Improvements in the construction of " lamp feeders and other vessels from which fluid is poured out " through tubular spouts." An air communication is established " between the outlet of the spout " and " the interior of the " vessel itself, which must either be air-tight or capable of being " made air-tight." The air tube may be entirely within the spout, or entirely outside of it, or partly within and partly without. To make the vessel air-tight a screw capsule is preferred; or the vessel may have no upper outlet, and be filled through the spout while the air communication remains open.

By the aid of a feeder thus arranged lamps and other vessels may be filled without risk of the oil overflowing, "as the spout " of the feeder being inserted in the lamp or other vessel at the " height it is desired to fill it, and the fluid being poured out, " directly it reaches the level of the air channel in or near the " outlet of the spout, its further flow instantly ceases."

[Printed, 6d. Drawing.]

A.D. 1864, December 24.—N° 3206.

ROBINSON, THOMAS.—(*Provisional protection only*).—"Im- " provements in tea pots, coffee pots, claret, hot water, and other " jugs having metallic covers." A tube "is placed through or " by the side of the handle into the body of the pot," and within the tube is "a hollow rod containing a small steel spring." On the upper part of the rod is a thumb-piece, and at the lower end a "curved piece of metal" whereto is attached a "wheel or roller " which works in a corresponding piece of grooved metal or lever

“ affixed to the under part of the lid, but extended from the joint  
“ pin in an opposite direction to that of the lid, the joint of the  
“ lid forming the fulcrum.”

The lid is opened by pressing down the thumbpiece on the top of the rod. The spring, “resting on a horizontal pin,” takes the rod back to its original position; or “the weight of the lid may  
“ be brought to bear on it, and the spring be dispensed with for  
“ that purpose.”

[Printed, 4d. No Drawings.]

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## 1865.

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A.D. 1865, January 4.—N<sup>o</sup> 27.

THOMPSON, NATHAN.—“Improvements in stoppers for bottles, jars, vessels, and tubes, also for ordnance and fire-arms.” In this stopper a ring of vulcanized india-rubber or other soft-yielding elastic substance is placed between an upper and a lower disc or plate, and is caused “to bulge or protrude outwards in all directions” by drawing the discs towards each other. For this purpose a hook is secured to the upper surface of the lower disc; it rises up through a slot in the upper disc where a lever is hooked on to it. The discs are drawn towards each other by pressing down the lever. When the lever is down it generally lies in a recess formed for it in the upper disc. This disc is usually of larger diameter than the mouth of the vessel, and sometimes is provided with a ring which serves as a handle.

In the provisional specification it is stated that “the lever is cranked or has a cam surface on its short end,” and that when it is turned on its axis, “such cam-shaped or cranked arm presses  
“ on the top of the upper plate.”

The specification contains an account of the method adopted by the patentee for the manufacture of discs, hook, and lever. There is also in it a description of slight modifications of the stopper; in one the discs are of wood; in a second the lever is a semicircular flap; and in a third the discs are drawn nearest together “when the lever is in a vertical position.”

[Printed, 10d. Drawing.]

A.D. 1865, January 16.—N° 132.

ROGERS, HENRY JAMES, and SCHOLFIELD, JONATHAN MATHER.—(*Provisional protection only.*)—"Improved means of closing the mouths of bottles or other vessels." In the interior of the bottle neck a screw thread is formed, and immediately below this the neck is contracted "so as to form a shoulder." A corresponding screw thread is formed on the stopper, and below this an annular groove wherein is placed a ring of cork or other elastic substance. The upper part of the stopper is made with a milled or fluted flange, by aid of which the stopper is screwed into the bottle neck. The stopper is made "of glass, earthenware, or other hard material."

Ordinary corks are secured, especially in bottles containing soda water or effervescent or aerated liquids, by means of a wire clip "bent somewhat in the form of an inverted U." The ends of the clip are bent outwards and pass through two eyes on a thinner wire which is fastened round the bottle neck. The part of the clip which extends over the cork "is curved or waved horizontally, so as to pass nearly round the edge of the cork instead of across the centre of the same, so that the clip does not cut into the cork."

[Printed, 4d. No Drawings.]

A.D. 1865, February 1.—N° 283.

ROPER, JOSEPH.—(*Provisional protection only.*)—"Improvements in corkscrews." The screw and stem are as usual in one piece and secured in the ordinary way to the head, and before being secured they are passed through "a barrel with a long tubular neck." Attached to the head is a tube which conceals the stem and into which "the neck slides as the screw is inserted into the cork."

The cork is drawn by continuing to turn the screw in the same direction, "this action forcing the cork up the worm of the screw and out of the neck of the bottle." The cork is released from the screw by turning the head in the contrary direction.

[Printed, 4d. No Drawings.]

A.D. 1865, February 7.—N° 341.

KILBURN, CHARLES.—(*Provisional protection only.*)—"Improvements in the construction of life belts, swimming belts, jackets,

“ and buoys, and in the employment and utilization of certain “ materials in the manufacture of the same.” The inventor proposes to utilize old corks and bungs, “ whether they be whole or “ broken, cut up in shavings or in powder.” He forms a frame wherein he lays and compresses by preference old wine corks; these he unites by twine or other material, “ so that when removed from the frame they retain the form or shape of the same.” The united corks are then to be inserted into compartments formed in a belt, jacket, or buoy.

[Printed, 4d. No Drawings.]

A.D. 1865, February 14.—N° 414. (\* \*)

HINE, WILLIAM CONWAY.—(*Provisional protection only.*)—“ Improvements in stoppering bottles or other similar vessels and “ measuring quantities therefrom.” This invention consists in making the upper part of the stopper in the shape of a cap to cover the rim of the bottle’s neck, this cap when removed and reversed forming a cup wherein to pour the contents of the bottle. The quantities it will hold being marked on the outside, the cup serves as a liquid measurer.

[Printed, 4d. No Drawings.]

A.D. 1865, February 18.—N° 464.

CHIDLEY, JOHN JAMES.—(*Provisional protection only.*)—“ An “ improved method of stopping bottles.” The improvement consists of a “ valve sustained by a spring to stop a bottle from “ the inside.” The valve (of tin, boxwood, or any suitable material) “ is formed of a double flat disc, each of about  $\frac{1}{16}$ th of “ an inch thick, divided by a groove of about  $\frac{1}{16}$ th of an inch, “ which penetrates so far as to allow the connecting piece of the “ two discs to be about  $\frac{1}{16}$ th of an inch diameter.” The upper disc should be “ about  $\frac{1}{8}$ th of an inch less in diameter than the “ lower,” and the lower one should be slightly taper, widest at bottom and closely fitting the smallest part of the bottle neck. A flat disc of vulcanized india-rubber, “ about  $\frac{1}{16}$ th of an inch “ thick and about  $\frac{1}{16}$ th of an inch larger in diameter than the “ lower disc, and having a hole of about  $\frac{1}{8}$ th of an inch through “ the middle,” is passed over the smaller disc into the groove; “ the valve is then complete.”

It is proposed to keep the valve inside the bottle close to the neck by means of a spring made by thin steel tinned, "bent into an oval form, the two ends being soldered or fixed in the middle of the under surface of the valve." The lower bend of the spring has "a pointed stud soldered to the middle of its under surface," and the spring is to be "sufficiently long to press the valve firmly against the opening of the neck of the bottle by resting on the pointed stud." The spring should not touch the sides of the bottle. The bottle should have "a small indentation in the middle of the bottom" to receive the stud, and the bottle neck should be smallest in its inside diameter at the part where it joins the body of the bottle. "On pressing the spring and valve down the neck into the bottle the disc of india-rubber will be turned over the outside edge of the lower disc, which then becomes too large to return through the neck," and the bottle will be closed air-tight.

The inventor describes two modifications of the foregoing arrangement.

[Printed, 4d. No Drawings.]

A.D. 1865, February 27.—N° 546. (\* \*)

GEYELIN, GEORGE KENNEDY.—(*Provisional protection only.*)—"An improvement in air-tight jars for preserving eggs and fruits, and such like articles of food." "The jars and covers are so constructed that they will show at any time whether they are really air-tight, and how long they remain so." To obtain this result, a cap made of some elastic material, such as india-rubber, is employed for the outside covering of the jar, "with a strong ring of the same material, which fits in a groove after the air of the jar is rarified either by placing it in hot water or by packing the material. When hot the cap is fixed on the jar, which will be found depressed on the jar cooling, and remain so as long as the jar keeps perfectly air-tight."

[Printed, 4d. No Drawings.]

A.D. 1865, March 4.—N° 606.

JOHNSON, JOHN HENRY.—(*A communication from Henry Bateman Goodyear.*)—"Improvements in stopping bottles," containing liquids "which are not charged with fixed air or gases." A ball of india-rubber or other elastic substance capable of floating



in the liquid, and of larger diameter than the inside of the bottle neck, is thrust into the bottle; it is pulled up into the neck and forms a stopper by means of "an instrument composed of three or more diverging elastic wires firmly secured to a handle to be held in the hand of the operator." The bottle neck may be so contracted inwardly as to prevent the ball from being drawn out by the force necessary to pull out the wires. Another mode of preventing the accidental withdrawal of the ball is the employment of "a check piece contained inside a fixed metal collar, which fits over the top of the neck;" it consists of "a cross-bar extending diametrically across the collar and made to enter slightly inside the neck."

Instead of a hand instrument, an apparatus of the following description may be used:—A frame or standard is fixed on a table; its lower part is curved "corresponding with the outlines of the bottle." To a bracket projecting towards the rear is pivoted a lever, the front end of which is jointed to a plunger whilst its rear end is connected to a rod which passes through the table and is attached to a treadle. The plunger moves up and down within two guides; to its lower end are secured the wires (six, or more or less) which pass through a ring carried by the standard. The check piece mentioned above is combined with the ring. The bottle stands on a spring platform; it is placed accurately by means of a gauge; and its upper part is held by a clamp or guide.

A spiral spring or weight "is attached to the forward end of the lever in such manner as to tend to depress the plunger," and pressure on the treadle raises it and with it the wires.

[Printed, *sd.* Drawing.]

A.D. 1865, March 7.—N<sup>o</sup> 638.

CLARK, WILLIAM.—(*A communication from François Perret.*)—"Improvements in cork-cutting machinery." "The chief feature" of this invention consists "in the self-acting arrangement for changing the corks simultaneously with the sharpening of the cutter."

The driving shaft, mounted on a foundation plate, carries a fly wheel and bevel gearing for giving motion to a longitudinal shaft; this shaft transmits motion by toothed wheels to the cork holder; it also carries a "disconnecting lever for releasing the finished corks." On the fly wheel is a pin, to which is jointed a con-



necting rod "converting the continuous rotary motion" of the wheel "to a to-and-fro-motion" for actuating the knife carrier. The rod may be fixed in either of several holes in the carrier "in order to produce a longer or shorter stroke;" for this purpose it is made in two parts, and its length is regulated by screws and nuts. The knife carrier slides in a guide, which can be fixed nearer to or farther from the foundation plate and so adjust the position of the knife with regard to the cork holder. The knife is of sufficient extent to enable its edge to come into contact with one or more sharpeners. The cork holder is formed of two parts, one carrying a toothed wheel slides and turns "in a triple bearing," the other simply turns in a bearing. The first part turns by the action of its toothed wheel, and slides by means of a forked lever; this lever is worked by the disconnecting lever, which, together with a spring, presses this part of the holder against the cork. The quarters of cork are put into an inclined shoot; they are retained in it by a stop piece; the supply is regulated by a rod "actuated" by an intermediate wheel."

The "action of the apparatus" is described in the specification.

[Printed, 8d. Drawings.]

A.D. 1865, March 8.—N° 646. (\* \*)

IRELAND, GEORGE.—(*Provisional protection only.*)—"Improvements in stoppers for closing bottles and for other like purposes." The improved stopper is made in two parts. The one part is tubular, is covered at its lower end with soft or elastic material, and is put into the neck of the bottle like an ordinary cork. The other part, which is moveable, consists of a disc large enough to cover and close the top and wide end of the fixed part. To the centre of the under side of the disc a long thin rod is fixed having a weight at its lower end. This is placed in the fixed part, the rod passing through a hole in a cross bar at its bottom. So long as the bottle is upright, the disc lies close on the top of the fixed part. When the bottle is inclined, the disc is moved from this position through the operation of the weight, and the liquid flows out.

[Printed, 4d. No Drawings.]

A.D. 1865, March 23.—N° 814. (\* \*)

CROWE, CHARLES HENRY.—(*Provisional protection only.*)—"Improvements in stoppers for bottles, jars, or other vessels, the

" same being applicable to fire-arms and ordnance." A stopper is proposed to be made, by preference of wood, in parts which are divided longitudinally and attached to a stem. The parts form a hollow at the lower end of the stem into which " a conical " plug is forced by a screw;" an elastic covering on the stopper is thereby expanded and closes the opening into which the stopper is inserted.

[Printed, 4d. No Drawings.]

A.D. 1865, April 3.—N<sup>o</sup> 931. (\* \*)

BÜNGER, WILLIAM.—(*A communication from Frederick Kühnmann.*)—(*Provisional protection only.*)—" Improvements in vessels " or apparatus for melting sealing-wax, glue, or other substances." An external vessel, by preference of conical shape, is employed, having a door on one side for introducing a spirit or other lamp; holes for the admission of air are pierced through the lower part, and others near the upper part " for the escape of the heated air " and products of combustion." Upon the upper rim an inner vessel is supported, " consisting of a central chamber partly sur- " rounded by a conical-shaped jacket, the smaller part being " downwards, thus forming a space between it and the outer " vessel." The wax or other substance of a like nature is placed in the jacket, and, as it melts, it flows through holes formed around the central chamber into the bottom thereof, " the bottom " of the central vessel being by preference formed double or with " a space between them to prevent the burning of the wax." For melting glue or similar substances the holes forming a communication between the jacket and central vessel are dispensed with, and water is poured into the jacket. The apparatus affords great facilities for sealing bottles.

[Printed, 4d. No Drawings.]

A.D. 1865, April 15.—N<sup>o</sup> 1065.

McDOWALL, JOHN.—" Improvements in apparatus for shaping " corks." A cast-iron bed plate is fixed on a wooden table top, and below the table is a horizontal shaft moved by a treadle or other power. The quarter rotates, and the cutting tool " is moved " from end to end in a direction parallel to the cork's surface." A spindle carried in a headstock has its outer end bearing against a centre pin; on it is a pulley in the inner face of which is a pin bearing (when in gear) with a snug on the spindle. On the inner

end of the spindle is a "grooved face plate," against which the quarter is "pressed by a following centre spindle" having a loose cap on its point. The face plate is formed with points to hold the quarter and with grooves "to admit of the point of the shaping tool cutting completely through" the quarter. The tool is "a long narrow tapered segment," by preference "slightly larger than the cork;" the cutting edge is "slightly oblique, the corners being rounded off;" it is held in a clamp in a slide, the clamp being fitted with two screws, one to regulate its height the other its position horizontally. The slide works in guides in a rest plate, which is adjustable on the bed plate for cutting cylindrical or taper corks. A moveable setter causes the quarter to be placed "centrally in position;" its front end jointed to the sliding portion can be "turned up to receive a fresh quarter." The following spindle is moved backwards and forwards by a bell-crank lever, on which is jointed a spring catch "gearing with a fixed segmental ratchet rack." The tool-carrying slide "may be moved forward by hand or by a feed motion derived from the rotating spindle." The patentee describes at length what he styles "a simple and convenient self-acting feed motion."

In connection with the foregoing there are provided appliances for other operations. "A rapidly revolving spindle is arranged to receive a circular saw for cutting up the cork into quarters and working in connection with a slide and gauge adjusted to the size required." On the same spindle and along with or in place of the saw may be fixed "a circular disc knife for finishing the ends of the corks;" also "a round cylindrical file or rasp for removing roughnesses from the inner side of the uncut cork;" and finally "a series of circular saws or revolving cutters for equalizing the thickness of the cork before cutting it into quarters."

[Printed, 1s. 4d. Drawings.]

A.D. 1865, April 22.—N° 1132.

HASELTINE, GEORGE.—(*A communication from Francis Daniel Pastorius and John Jackson.*)—(*Provisional protection only.*)—"An improved implement for removing corks from the interior of bottles and other vessels." A spring loop consisting of a strip of steel is made of such form and size as to pass easily down the neck into the body of the bottle, to expand therein, and to form a loop sufficiently large to pass freely over the cork. At the bottom

of the loop is fixed a disc "formed with a channel or groove across its back, and through this groove the ribbon or strip of metal forming the spring loop or holder is inserted and secured." The ends of the loop are fastened to a shank having a handle on its extremity. In using the implement the cork falls within the loop; the loop is drawn out by the handle, and while being drawn out the disc "is caused to press against and force the cork out of the bottle."

[Printed, 4d. No Drawings.]

A.D. 1865, April 25.—N° 1149.

SIBLY, NICHOLAS.—(*Provisional protection only.*)—"Improved apparatus for pouring and decanting liquids." The aperture of the spout of the vessel is placed "at the point or level to which the liquid is desired to rise;" the influx of air is "stopped by the rise of the liquid to such point or level," and the further outflow is thus prevented.

In the annexed sheet of drawings two vessels of different shapes are exhibited. One is "a shallow vessel" with a bent spout projecting from the bottom and a triangular stay between the spout and the vessel. "The peculiar form of the spout is to admit of its being placed in the vessel to be filled before pouring out the liquid and to allow the vessel to be lowered before the spout is raised out of the liquid." The stay "encloses a space the width of the spout;" there is a hole in the spout, another opposite it in the vessel; these are for the quicker passage of air into the vessel; a third hole "either in the spout or the vessel" allows "the liquid to drain out of the spout;" all the holes are "within the stay." A tube may be substituted for the two upper holes; it is to be placed between the "extremity of the spout" and that part of the vessel "which is occupied by the air as the liquid flows out."

The other is an upright cylindrical vessel; the spout is removable and connected (with or without an air tube inside it) to the mouth of the vessel. The spout may be "fitted with a self-acting valve," the arrangement of which is explained in the Specification.

[Printed, 8d. Drawing.]

A.D. 1865, May 4.—N° 1247.

REDRUP, GEORGE.—"Improvements in machinery or apparatus for cutting cylindrical or conical articles." The machinery differs

in the following respects from that for which Mr. Redrup obtained letters patent dated February 7th, 1863, No. 352. The cutters, as they are brought forward in the act of cutting, "are expanded so that there is no friction upon the article while being cut;" other cutters take off "the edge of the smaller end of the bung or shive at any required bevel;" and the material to be cut is "placed on a cutting bed of wood, which is let into a third bearing bracket" secured to the foundation plate or cast in a piece with it.

A collar is fixed on one end of the inner spindle "near the enlarged end thereof;" it has "as many recesses on its outer circumference" as there are cutters employed. "The non-cutting ends are inserted between the enlarged end of the spindle" and a clamping collar provided with set screws. The cutters are capable of sliding in the recesses, so that, as they are pressed up to their work, "they will gradually expand until the bung or shive is wholly cut or severed from the piece of wood;" they "press upon the side of the bung or shive which is being cut at their cutting edges only." The cutters themselves "may act as springs, or springs may press upon them from the outside." Cutters and springs of different shapes are shown in the sheet of drawings, one shape requiring wedged-shaped projections on the collar instead of recesses.

Arrangement of the "other cutters:"—The collar has as many holes drilled in it lengthwise as there are cutters, and the stem of a cutter is fitted into each hole. "The cutting end is flat and is capable of sliding in a slot cut in the side of the collar at the largest end, such slots passing into the holes." The ends of the stems are passed through another collar and secured by nuts. Between the collars is a coiled spring tending to push the last-mentioned collar from the former, so as to keep the cutters "within the slots;" or each stem may have a coiled spring round it to act in like manner. The working of these cutters is described in the specification.

[Printed, 10d. Drawing.]

A.D. 1865, May 12.—N<sup>o</sup> 1320. (\* \*)

GARRETT, SPENCER THOMAS.—(*Provisional protection only.*)

—"An improvement in stoppers and flasks, bottles, and other similar vessels." This improvement consists in fitting into the cork or stopper, or upper part of a flask, "a tube which extends inside the flask to near the bottom thereof, and in making sh

“ aperture through the stopper or through the neck of the flask  
“ below the stopper to admit air. When suction is applied to  
“ the tube the liquid in the flask rises in the tube, and is replaced  
“ by air entering through the air aperture.”

[Printed, 4d. No Drawings.]

A.D. 1865, May 18.—N° 1373.

BROOMAN, RICHARD ARCHIBALD.—(*A communication from Gustave Bousigues.*)—(*Provisional protection only.*)—“ An improved method of securing corks or stoppers in bottles ” which contain effervescent or fermented liquids. “ Instead of cutting “ the two ends of the first string close to the cork, a short length “ of string should be left in the right hand of the operator, and “ the other end be cut close to the cork ; ” the second string should be cut in the same manner. The two loose ends are thus at the two sides of the cork, and are held by the lips or recesses “ formed in the cork by pressure ; ” they are then “ led to the point “ where the wire is twisted and are below the wire,” so that on being drawn upwards, “ they raise first the wire and then the “ strings.”

The wire “ should have only one twist at the point of junction “ of the loose strings, and this twist is formed under the flange “ of the neck ; ” the two parts of the wire “ are then led above “ the cork to the middle of the large angle of the strings, “ and are connected by being twisted carefully at a convenient “ inclination.”

[Printed, 4d. No Drawings.]

A.D. 1865, May 29.—N° 1466.

SETTLE, WILLIAM.—(*A communication from John Matthews.*)—“ An improved bottle stopper.” This stopper does not require to be taken out when the liquid is being poured out of the bottle, the neck “ being formed for the purpose.” A coiled spring has its top end bent over and fixed to a central rod which carries at its lower end a valve composed of a disc of india-rubber between two buttons, the upper smaller than the lower one. The stopper is inserted by thrusting the valve through the neck ; “ the disc “ folds around the upper button during the passage into the “ bottle, while the greater size of the lower button prevents the “ withdrawal of the valve as the disc folds over it in attempting

“ to force it out of the bottle.” The lowest coil of the spring rests on a shoulder in the neck, and the top of the neck is tapered to prevent the spring from coming out. When the spring is not pressed, “ it pulls up the disc against the bottom of the neck and “ effectually stops the passage.”

The inventor has contrived an implement for opening the bottle when provided with such a stopper :—A tube (which passes into the neck) is fixed to a cap “ having spring legs which clasp the “ outside of the mouth.” The tube presses down the spring “ so “ as to place the valve below the neck.”

[Printed, 6d. Drawing.]

A.D. 1865, June 5.—N° 1539.

JOHNSON, JOHN HENRY.—(*A communication from Adolphe Jacquesson.*)—“ Improvements in corks or bungs for closing bottles “ and other receptacles for liquids.” “ An annular groove” (there may be more than one) is cut round the cork or bung, “ by preference nearer the top than the bottom thereof, so that “ the contents of the bottle or vessel may not be liable to come “ in contact therewith.” In this groove is placed an elastic ring, “ which when composed of caoutchouc, gutta-percha, or similar “ gums, must be first treated with a view to the removal of the “ unpleasant flavour therefrom.”

[Printed, 6d. Drawing.]

A.D. 1865, June 9.—N° 1570.

FOX, HOWARD BUSBY.—“ Improvements in the construction “ of the necks of bottles and other vessels, and in means for “ closing or covering the mouths of such bottles or vessels.” The neck is made with a screw thread on its outer surface, and “ over and on each of the screw threads” is twisted a cap lined with cork or other elastic substance. The neck may be either vertical or conical, the cap and lining corresponding in shape. The lining of the top of the cap is a disc with a convex bearing surface, so that “ part of it may enter the mouth of the bottle.” The sides of the cap are made with “ indentations to prevent the “ cap from being turned round on the cork lining,” and the lower edge is turned inwards. There may be a lining of shellac or other adhesive matter between the cork and the cap. The outside of the cap may be varied in shape. The patentee prefers that the



cap be made of "tinned iron, white or other metal," and the lining of cork; but the cap may be of "wood, ebonite, glass, " earthenware, or other hard material," and the lining of gutta percha, india-rubber, or other elastic or flexible substance.

The invention is applicable to "tins, drums, and other vessels " or packages made of glass, metal, or other material."

[Printed, 8d. Drawing.]

A.D. 1865, June 28.—N° 1727.

BOTHAM, WILLIAM.—"A new and improved food or fluid " regulator for feeding bottle and other tubes." By the use of this regulator the supply " is rendered more uniform and regular " than it can be by the action of exhaustion or suction by means " of a simple tube or tubes wherein the supply is sudden and " returnable into the bottle when the air ceases to be withdrawn " for a moment;" the regulator acts also as a strainer.

The regulator consists of a small dome or other shaped hollow piece of india-rubber or other suitable elastic material; it is " to " be fitted on the end of a glass, metal, or other tube, and after- " wards inserted into the india-rubber tube belonging to the feeding " bottle." The dome-shaped surface is perforated with a number of " leech-bite valves;" or the valves may be cut " in a cross " section, or in a series of arcs or three-quarter circles, or merely " with a central hole or any number of holes."

Some regulators are made with a "cylindrical flange turned " upwards and enlarged so as to leave a space between the dome " and flange." The flange fits on " to the end and outside of a " glass or metal, india-rubber, or other tube, which is placed in " the feeding bottle."

[Printed, 6d. Drawing.]

A.D. 1865, July 5.—N° 1775. (\* \*)

Longbottom, John, and Longbottom, Abram.—"An " improved combination of materials for the manufacture of " carpets, floorcloth, felt, wall paper, fireproof flexible roofing, " ship and boat building, and for other similar purposes." Amongst other uses, the said materials may be applied to the manufacture of " stoppers for bottles, and bungs."

This invention consists in the application of certain materials " to the manufacture of an elastic, flexible, durable, water, insect



"and fireproof composition," called "kampakaon," which is made as follows:—*First*, india-rubber is dissolved in coal tar naphtha; to this solution a certain proportion of powdered shellac is added. *Second*, alum, sulphate of ammonia, boracic acid, glue, molasses, boiled linseed oil, and hydrochlorate of ammonia, are dissolved in water. *Third*, the first and second solutions are blended or mixed. *Fourth*, woody or fibrous material is boiled in a solution containing double sulphate of potash and alumina, sulphate of iron, and borax. *Fifth*, the blended or mixed solutions are mixed with the heated woody or fibrous materials in a mixing machine that is enclosed in a steam jacket, the whole of the materials being thus incorporated into a homogeneous mass. *Sixth*, the said mass is well worked in a heated masticator. *Seventh*, from the masticator the kampakaon is passed several times through a series of heated rollers of gradually cooler temperature, the finishing rollers being nearly cold. "In this stage of the process the kampakaon assumes the size and thickness required for the purpose to which it is to be applied." *Eighth*, the kampakaon is then submitted "to a cold bath of metallic salts." The total effect is to render the kampakaon completely fireproof. *Ninth*, "when the kampakaon is intended for fireproof flexible roofing or for pavements," fine dried sand, together with lime, chalk, or gypsum is incorporated with it in the mixing machinery. *Tenth*, when intended for carpets and similar purposes, designs may be printed, or otherwise marked upon it. *Eleventh*, when the kampakaon is to be of extra strength, veneerings of fabrics, wood, or metal, are inserted between two or more thicknesses thereof, "cementing the same together, after which it is again passed through the rollers." *Twelfth*, peat or turf (of a fibrous nature) may be cut into blocks and submitted "to a steeping process in the compositions before named." It is thus "fitted for many useful purposes."

[Printed, 4d. No Drawings.]

A.D. 1865, August 12.—N<sup>o</sup> 2093.

BETTS, WILLIAM.—"Improvements in the manufacture of capsules." These capsules are intended for bottles in which "the corks protrude or extend beyond the neck or rim," and the invention consists in making them vertically "corrugated or indented in that portion of their surface which extends from the

"apex of the cork to the rim of the bottle." The capsule is manufactured "in the ordinary well-known manner up to the operation of corrugating the end." This operation is performed by transferring the capsule to the end of a corrugated plunger, which is forced into a corrugated die, either in the capsule-making machine or by hand. The top of the capsule may bear any device or trade mark plain or coloured.

[Printed, 6d. Drawing.]

A.D. 1865, August 17.—N° 2125.

RIMMEL, EUGENE. — "An improvement in the manufacture of metallic capsules." The capsule is made "of pure tin or any other metal or compound of metals possessing sufficient ductility." The apparatus employed in the manufacture consists of (1) "a mould fixed to a bed," and (2) a plunger, "secured to the lower end of the threaded shaft" of a press, immediately above the mould. A disc of metal is placed in the mould, and the plunger "is forced down into the mould by turning the handles" of the shaft. The mould is "engraved with any device desired to be stamped on the capsule."

[Printed, 8d. Drawing.]

A.D. 1865, August 19.—N° 2150.

AUSTIN, JAMES BATTLE.—(*Letters Patent void for want of Final Specification.*)—"Improvements in apparatus for stopping bottles." The stopper employed is composed of (1) "a taper plug of glass or other material capable of entering freely the neck of the bottle," and (2) "an elastic and flexible sock of india-rubber." The plug is made with a head or flange larger than the neck. The sock is a tube "nearly twice the length" of the plug; it is closed at one end and has "a thickened flange or edge" at the other. The plug is put into the sock "until its end reaches the bottom of the sock," and the open end "is doubled over so as to bring the thickened flange or end back to the end of the plug." The sock is by preference cemented to the plug. This stopper "requires a twisting motion" to force it down into the bottle neck; it is readily drawn out "by a direct pull of hand."

Instead of a sock "a tube of about half the length, with a thickened flange or edge at its end, may be employed."

[Printed, 4d. No Drawings.]

A.D. 1865, August 23.—N° 2168.

LEVISOHN, LIPPMANN JACOB.—“An improvement in syphons,” whereby the liquid is drawn off without being disturbed, and no more air is admitted than is necessary to allow of the outflow.

On the shorter leg is fixed a cork or bung which fits the mouth of the vessel. An air-tube passes through the cork, extends round the bend and down the longer leg, and “terminates in a passage formed through the cork which regulates the outflow of the liquid.” An exhausting tube passes down a portion of the longer leg and terminates in like manner to the air-tube. The cork has four passages or channels formed in it; one through which the liquid flows; a second which when brought opposite the exhausting tube communicates between the tube and the longer leg; a third forming a communication between the air-tube and the outer air when the cock is open; and a fourth which comes opposite the air-tube when the second channel is opposite the exhausting tube.

Action :—Turn the cock a quarter round; exhaust the air from the syphon; turn the cock another quarter round, and “the liquid will then flow in a continuous stream.”

Modification :—The exhausting tube is dispensed with. The longer leg is made of two tubes, one of which slides on the other. By drawing down the outer tube after the shorter leg has been placed in the vessel “a vacuum is formed in the syphon.” The air-tube does not extend to the cock, but has a separate one; and the cock has only one passage, namely, the one for the outflow.

In either arrangement the shorter leg may consist of two tubes, one sliding freely over the other.

[Printed, 10d. Drawing.]

A.D. 1865, August 25.—N° 2187.

WATKINS, CHARLES ADOLPHUS.—“Improvements in apparatus for supplying carbonic acid gas to casks and other vessels from which beer, wine, and other fermented liquors are drawn.” This gas is supplied to bottles in the following manner :—The stopper is perforated with two holes “near to and parallel with the axis.” A short tube is inserted into one hole, “leaving sufficient projection on the outside to attach the flexible tube from the gas generator.”

A longer tube is inserted into the other hole; "the outer portion is bent for the purpose of pouring;" the outer end is closed with a cork or capsule. Gas enters and supplies the place of the liquid poured out.

The gas is supplied to casks "by a flexible tube attached to "a hollow vent secured in the cask" or to "the nozzle of one "of the syphon taps now in use after the beer is tapped;" in the latter case "the generator cock must not be turned on" until "the cask requires vent."

[Printed, 10d. Drawing.]

A.D. 1865, August 30.—N<sup>o</sup> 2233.

GORE, WILLIAM HENRY POSTLETHWAITE.—"Improved means "of securing corks in the necks of bottles." This invention applies especially to bottles containing aerated or similar waters, sparkling wines, or effervescent liquids.

First method :—A hole is drilled in a horizontal direction through opposite sides of the neck, and the cork is secured by passing a pin through the holes and the cork. The pin is by preference sharpened at one end and "furnished at the other with "a head, eye, or loop."

Second method :—A hole is drilled in a perpendicular direction through opposite sides of the neck; a wire is passed through the holes and over the top of the cork; the ends of the wire are secured by bending them up, or one end is made with a head and the other is bent up.

Third method :—Perpendicular holes are employed; to each is attached a metallic eye or loop for the reception of one end of a metallic clip which passes over the top of the cork. The clip slides on to and off the cork.

Fourth method :—Two or more metallic hooks are employed; the hooks "pass into and partially through the top of the cork;" the other ends are pierced with a hole for the passage of a wire which is secured round the bottle neck.

In the first method a strip of metal with two projecting lugs may be substituted for the holes. The strip is fastened round the neck, and the pin passes through the lugs and through or over the top of the cork.

[Printed, 8d. Drawing.]

A.D. 1865, August 31.—N° 2246.

**READ, WILLIAM THOMAS.**—(*Provisional protection only.*)—  
“Improvements in apparatus for stopping bottles.” The inventor employs “a wedge-shaped plug made of glass or porcelain by preference ;” its lower end is “considerably less in diameter than the interior” of the bottle neck, whilst at its upper end “it just enters freely into the neck.” On to this plug “a ring of vulcanized india-rubber is sprung, and it is prevented slipping off at the lower end by an enlargement or flange at the lower end of the plug.” A flange or head at the top of the plug stops the ring “when it has entered the required distance into the neck.” The interior of the neck is taper so that the ring “becomes compressed between the two inclines,” and “a tight joint is made.” The head of the stopper should have grooves cut in it to receive wire or string by which the stopper is tied down in its place ; the edge of the head should be grooved or milled “to enable a tighter hold to be taken of it to withdraw it from the bottle.”

[Printed, 4d. No Drawings.]

A.D. 1865, September 20.—N° 2393.

**VILLETTE, LEON.**—“Improvements in machinery for cutting and shaping cork, with apparatus for registering the manufacture.” The first machine described serves “to operate upon cork in thin sheets of various forms,” and “to prepare square blocks of cork.” The cutter is a steel band having its extremities brazed together and forming a circle. It is mounted on two pulleys which turn in bearings on a vertical framing, and are adjustable as to distance so as to keep the cutter stretched. Round the pulleys is a flange “to keep the blade to their centres,” and on their surface a band of leather or gutta percha “to prevent the sliding of the blade.” An adjustable guide and two blocks or guide plates guide the cutter “to the centre” of a cut in a table, and a sliding guide regulates the approach of the cork to the cutter and the dimensions to be cut off. On the table, “behind the blade,” is fixed “a conical piece of iron” which removes the part cut off, “in order to avoid friction and facilitate the working of the machine.” The patentee describes at length the various parts of this machine and their action.

The second is “arranged to transform square pieces of cork

"into round ones;" of this also he gives a very detailed description. The novelties claimed are (1) two cutters :—One of these is "a continuous steel blade" similar to the one before described and mounted in like manner; the other is "ferrule-shaped;" it turns "on the end of a hollow axle on which it is adjusted," and a piston "causes a square piece of cork to pass into the centre" of the cutter, whence it issues "cylindrically rounded." (2) A cork holder "formed of two nipping plates" "set in circular and "intermittent motion on their axles;" between these "the mechanism of the machine itself" places a square of cork, which is pressed between them by a cam that "acts on the end of one of "the plates." As soon as the nippers have made one turn, they loosen from the cork now rounded, and the cork is driven out of them by another square, "and so the operation is continuously "repeated." (3) Hoppers containing squares; these "permit "the machine to feed itself by means of a piston for each blade "and hopper;" the piston "passes alternately beneath the said "hopper, taking a piece of cork which it conducts in the direction "of the blade." (4) A click or counter "mounted on the axle "which governs the feeding piston;" it is composed of pinions, toothed wheels, dials, and indexes; "the first dial indicates units, "the second tens, the third hundreds, and so on."

The patentee does not "necessarily work the blades simultaneously." The squares may be pushed towards the ferrule-shaped cutter "by a workman using a hand piston." The counter may be thrown out of gear with the machinery.

[Printed, 1s. Drawing.]

A.D. 1865, October 13.—N° 2650.

NEWTON, WILLIAM EDWARD.—(*A communication from George Richard Willmot.*)—"Improvements in tompons for "ordnance and small arms, and in stoppers for bottles and other "vessels."

1. Tompons for ordnance :—The head is made with a flange broad enough to cover a portion of the face of the muzzle. The bottom is a compressing plate. A screw passes freely through a hole in the head and screws into a hole in the plate; a knob at its outer end serves as a handle wherewith to turn it. An elastic packing ring is fitted into a recess formed between the head and plate; it consists of a cylinder of vulcanized india-rubber coated

on the outside with unvulcanized rubber or other gum, "impervious to the free sulphur of the vulcanized gum," and then covered with leather, cloth, or other substance "which is not sticky," and does not contain any matter "by which the corrosion of metal will be produced." Turning the screw draws up the plate towards the head, and expands the packing circumferentially.

2. In stoppers for small arms there is no recess between the head and the plate; between them and round the screw is placed a metal tube, round which the packing ring "fits snugly." The tube prevents the ring "from being compressed tightly around the screw."

3. Stoppers for bottles and other vessels:—The external form of the packing ring is "an inverted frustum of a cone of very slight taper;" it is "covered with woollen flock;" the upper and lower portions "should be made of different degrees of hardness, the lower being the harder." The screw has a circular termination "which abuts against and is large enough to nearly cover the bottom" of the ring, thereby answering the purpose of the plate; it projects above the ring, where it is fitted with a nut "of proper form to enable it to be turned easily with the thumb and fingers." Between the nut and the ring is a collar or washer having attached to it a tube which surrounds the screw; and on the upper end of the screw is a stop to prevent the nut from being unscrewed too high.

Sometimes the nut is made in the form of a broad head to cover the mouth of the bottle; sometimes with a rim to form a cap for a metal flask or can.

[Printed, &c. Drawing.]

A.D. 1865, October 28.—No 2775.

CLARK, GEORGE.—(*Provisional protection only.*)—"Improvements in packing and labelling bottles, jars, and other fragile articles." For packing these articles bands of india-rubber or other elastic material are fixed in cases, &c., "in one or more lines or rows, so placed along and inside the bottom and top or lid of the package, as to pass across the body and shoulders or prominent parts" of the articles. By such an arrangement the articles with the wrappers round them are kept in close contact with each other, and vibration is prevented. The inventor especially prefers india-rubber tubes for his bands.

For labelling, a plug of wood or cork, "somewhat in the shape of a decanter stopper," is "inserted inside the top of bottle envelopes," so as "to be tied and securely fastened between the top ends of the envelope by the fastening string which binds them together." The enlarged top of the plug projects outside the top of the envelope, so that it can be used as a surface whereon to apply any inscription, &c.

Again, thin sheets are formed of any metal foil, and are "superimposed and fastened by pressure" or cement on sheets of gutta percha, paper, or textile fabric; pieces of these of any required size and shape are used to cover the tops, necks, and stoppers of bottles, &c., as labels, whereon any device may be stamped, engraved, or otherwise affixed.

[Printed, 4d. No Drawings.]

A.D. 1865, November 4.—N<sup>o</sup> 2844.

SANDERS, HENRY JOHN.—"A new or improved machine for drawing corks from bottles." In this machine the "operations of holding the bottle, inserting the corkscrew, drawing the cork, releasing the cork and the bottle when the cork is drawn," are all performed "by one up and down motion of a lever or treadle, or by turning a handle or cam." A pillar or stand has cast on it, or fastened to it, a bracket which carries a hollow socket bell-mouthed, and serving as a barrel to the corkscrew. The long arm of a bent lever is jointed to the pillar; the short arm carries a coiled spring attached at its lower end to a rack, which moves up and down in a bearing and on a stud, and another coiled spring which tends "to hold up the lever." A table (to hold the bottle) is arranged to move on the rack. The stem of the worm is tapped, and in the upper part of the socket is a nut tapped to fit the thread of the stem. "The cross head or hollow socket" of the stem is connected to the long arm of the lever by links; a steel washer forms the bottom of the hollow socket, a steel plate forms its top, and between the two a pin passes through the stem, carrying "bowls or runners for reducing the friction" of the stem. On the top of the barrel socket is a collar which serves as a bearing for the stem and as a shoulder for the nut to stop against, and in the lower part is a recess "into which the cork of the bottle passes while being drawn."

The action of this machine is fully explained in the Specification; the worm is thrust into the cork by a continued down-



of the corks required; and (2) a table beneath the spindle for supporting the piece of cork. The spindle is driven "by a twisted strap from a driving pulley on the main or disc cutter shaft of the machine."

The subordinate parts required, and the connection of the various portions of the machine are fully explained in the specification.

[Printed, 10d. Drawing.]

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A.D. 1866, January 1.—N<sup>o</sup> 3.

THOMPSON, NATHAN.—"Improvements in the manufacture of stoppers for bottles and other articles, and in machinery employed in such manufacture." These stoppers are made of compressed wood rendered hollow or tubular," and the wood preferred is osier or willow of about two years growth. The bark is removed; the wood is cut into lengths suitable for stoppers; and the lengths are compressed "by being forced into or through dies or die plates." The compressed lengths "are bored out to any desired extent, but short of the whole length," each being left closed at one end. This end is coated with a "water-proofing cement," and a metal head or cover is fixed on to the other. Below the head is placed a stop "to regulate the distance to which the stopper is to enter the mouth." The solid end is "slightly bevilled or chamfered" that it may be put in the more easily.

Each compressed length may be bored through from end to end and be stopped at one end with a wooden plug. The plug may be formed in such a manner "as to produce an enlarged or flanged end to the stopper."

In some cases an external covering of waterproof cement or other suitable material such as cork or leather is given to the stem of each stopper.

Sometimes "in order to economize the wood," lengths of wood are compressed; cylinders are cut out therefrom; and "the lengths of wood taken from the centres are then again compressed and again cut."

The instrument which the patentee prefers for drawing his stoppers out of bottles is one "similar to a pair of pincers."

The drawings annexed to the specification "show arrangements of machinery" (suitable for manufacturing stoppers such as are above described) which, says the patentee, "I prefer to employ;" but as he states elsewhere, "other arrangements of machinery" may however be employed for this purpose, he appears to claim only "the manufacture of stoppers" from compressed wood. "For the sake of economy" he makes his machines double-acting.

[Printed, 2s. 10d. Drawings.]

A.D. 1866, January 23.—N<sup>o</sup> 217.

BORE, RICHARD HENRY.—(*Provisional protection only.*)—"An improved siphon for drawing off liquids." In this siphon "the air can be exhausted by a simple movement of the hand." The longer leg is made in two parts, "the upper part being of about the same length as the shorter leg;" to it is attached a cylinder "capable of sliding telescopically over the lower end of the upper part," and "round this lower end" is fixed a washer or sucker which fits air-tight in the cylinder.

"If the cylinder be slid up to its highest position," and the shorter leg be immersed in liquid, "upon closing the extremity of the other leg and then elongating the same" the air will be exhausted, and the liquid be drawn over the bend.

In small siphons the closing of the lower end whilst elongating the tube "may be effected by the finger," but in larger ones "a tap should be fixed beneath the cylinder." A spiral slot and a pin may be used so that the cylinder will slide by turning it round.

The cylinder may be attached "side by side with the leg of the siphon;" the washer or sucker may be fixed "to a rod passing through the top of the cylinder," "an opening being made from the leg of the siphon to the lower part of the cylinder below the sucker, so that upon drawing up the rod the air would be exhausted."

[Printed, 4d. No Drawings.]

A.D. 1866, February 1.—N<sup>o</sup> 315.

CANDLER, EUGENE.—"Improvements in vessels and apparatus for containing and drawing off wine and other liquids." The

A.D. 1866, April 4.—N° 959.

BETTS, WILLIAM.—“Improvements in colouring capsules.” The invention consists “in colouring only a portion of a large number of capsules at one operation.” A convenient number of capsules “of the same or nearly the same size, and made as is usual of a slightly conical shape,” are mounted “one inside another,” so that only a portion of the rim or lowest part of each is exposed. The row is placed on a mandrel or other holder capable of receiving a rotary motion, and any suitably mixed colouring matter is applied with a brush whilst the capsules are rotating. The top capsule, which has its body exposed to the colouring matter, is taken off, and may be used again as a top to another row. The breadth of the band of colour may be increased “by placing wadding, cork, or other material” inside the top of each capsule.

[Printed, 4d. No Drawings.]

A.D. 1866, April 4.—N° 963.

HENRY, MICHAEL.—(*A communication from Louis Sauras.*)—“Improvements in apparatus for cutting cork.” In this machine the square of cork “has both a rotary and a rectilinear motion communicated to it while being operated on by a stationary cutter.” A frame or bench carries fixed bearings, in two of which is mounted a stationary tube having a spiral slot cut round its periphery. A shaft with a stud on it moves in the tube, the stud working in the slot. The shaft takes into the corresponding end of a spindle supported in a carriage, which slides in V guides and to which “rectilinear reciprocating motion” is given by a handle. The movement of the carriage causes the shaft to move and the stud to travel along the slot, whereby “rotary motion is communicated to the shaft.” On the spindle are keyed toothed wheels in gear with toothed pinions, which are keyed on axles carried by the carriage. Each axle has at one end a disc furnished with points. The discs are held in sockets which contain “spiral or box springs.” The cutter is “placed vertically and held between two plates by screws;” it is adjusted in position by “screws connected by a band chain.” A moveable handle is “attached to a pusher,” which slides in the carriage; the handles are connected by a spring.

The square is placed in one of the discs; the moveable handle is moved towards the other, "thereby pressing up the spring" and moving the pusher, which presses one of the axles with its disc towards the other and secures the square; the rest of the working of the machine is explained in the specification.

The cork when cut, and the cuttings or refuse parings, are pushed off the discs "by the springs in the sockets." The cutter is kept sharp by two whetstones, which are supported on a block fixed to the carriage. The inner bearing of the shaft "is made in sections held together by screws;" some of the sections are removable and adjustable, so that the tube may be inclined when conical corks are to be cut. Or "the bearings of the gearings" may be made adjustable for the same purpose. If steam or other power is employed to work the carriage, the pusher "may be employed for placing and holding the cork in position for and while being cut."

[Printed, 10d. Drawing.]

A.D. 1866, April 10.—N<sup>o</sup> 1025.

KENNAN, JAMES.—(*Provisional protection only*).—"An improved bung turning lathe." The mandrel is fitted with "a prong chuck" and one fast and one loose pulley. A sliding bar (fitted to the headstock) has "forks to guide and retain the belt on either pulley;" it is actuated by a lever "which oscillates upon a centre below the slide, so that a heavy ball fitted at its upper end will cause it to retain the slide in whatever position it may have been placed;" it is also furnished "with a friction brake," which arrests the mandrel immediately that the belt is shifted to the loose pulley.

Another part of the lathe consists of a "shifting headstock" having a slide bar fitted with a centre point." This bar is pressed firmly against the work by a spring, "and the means of withdrawing it is by a lever handle working in a vertical plane;" when desired "it is detained by a steel catchpiece." A buffer-spring on the right extremity of the bar prevents injury "in case of this catchpiece being withdrawn when the wood is not in its intended position."

Another part "consists of a slide rest or bed, which may be fixed in any desired position between the parts Nos. 1 and 2 on the lathe shears, and has one slide worked by a lever handle."

The tool may be fixed by a bolt and catch in any position in this slide.

[Printed, 4d. No Drawings.]

A.D. 1866, April 11.—N° 1035.

CLARK, WILLIAM.—(*A communication from Pierre Alcide Olivier and Alphonse Brisset.*)—"Improvements in apparatus for drawing "off aerated liquids." By aid of this apparatus "half a glass or "a glass of champagne or lemonade" or "other gaseous or "aerated liquids" may be poured out of a bottle without "uncorking the bottle" or deteriorating the rest of the contents. The cork is secured by the ordinary wire or string; into it is fitted a tube provided with (1) a branch pipe through which the liquid issues; (2) a stemmed valve to close the inner end of the tube, and (3) a spring "which has a constant tendency to close "the valve." The bottle inverted has its neck fixed in the neck of a stand by a binding screw, a bayonet joint, or other contrivance; and secured to the stand is a lever, which being depressed raises the stem and thereby opens the valve.

"The cork or stopper may also be screwed on the bottle so as "to enclose the neck."

[Printed, 10d. Drawings.]

A.D. 1866, April 20.—N° 1110.

DAUBISGNYE, DIDIER LOUIS NICOLAS, and CLEGG, ROBERT DAWSON.—(*A communication from Charles François André Pécaut.*)—(*Provisional protection only.*)—"Improvements "in bottle stoppers, and in the method of fastening the same "hermetically." The stopper is of glass or any suitable material, and "of a shape to allow of a washer of cork, india-rubber, "or other elastic substance." The stopper has applied to it "a "metal cramp or fastening which admits of taking into certain gaps or grooves formed in "the neck of the bottle and stopper." By turning the stopper the ends of the cramp "are brought "under the collar or rim of the neck, and made by a screw in the "centre of the stopper to bring it to a close contact and form a "sealed joint."

[Printed, 4d. No Drawings.]

A.D. 1866, April 20.—N° 1115.

JOHNSON, JOHN HENRY.—(*A communication from Jean Hyppolite Lamoureux and Edouard Gendrot.*)—(*Provisional protection only.*)—"Improvements in covering or protecting the "mouths of bottles, jars, and similar receptacles, and in capsules "employed therein." The inventors employ "an internal and "external capsule," the former made by preference "of cardboard stamped up into the form of a cap," and bearing a name or trade mark thereon. If the contents of the bottle, &c., require protection from damp, the cardboard is to be rendered "impermeable to moisture by any known process." The external capsule is made of metal foil, and with openings in the top or sides, through which the name or trade mark can be readily seen; the sides may be made to extend below those of the inner one, so as to be "plaited or folded down close round the neck," and the folds may be concealed by a gummed strip or label. The inner capsule may serve instead of a cork, but when a cork is used "a "mere flat paper or cardboard disc" with the name or trade mark thereon, and "placed inside the open metal capsule," may be substituted for the one before mentioned.

[Printed, 4d. No Drawings.]

A.D. 1866, April 28.—N° 1203.

HUTTON, THOMAS.—"Improved apparatus for closing the tap "holes of casks or barrels." The object of this invention is to dispense wholly or in part with corks, at the same time preventing the fouling of the cask "in so far as the entrance of air by "the tap hole is concerned."

First method:—A diaphragm of india-rubber, having a slit across the middle, is fixed inside the head of the cask opposite the tap hole; it must be of such strength that the slit will close "with sufficient force before the barrel is tapped to resist the "pressure of the contents," and also "on the withdrawal of the "tap." More than one diaphragm, each with more than one slit in it, may be used. The patentee does not limit himself to any shape of diaphragm; it may be "a thick plain sheet," or "a "hollow sphere," or "a flat or other shaped tube of india-rubber "which collapses by its elasticity." If the back of the diaphragm is made "of a conical figure, or circular or other protu-

“berant figure,” a ring of india-rubber is generally placed thereon “for strengthening the said diaphragm, and facilitating its contraction when the tap is withdrawn.”

Second method :—The tap hole is closed on the inside by a hollow ball of india-rubber enclosed within a cap, which is pinned or screwed to the inside of the barrel head. In the cap are holes for the admission of liquid to the tap. When the tap is introduced, the ball is pressed inwards, and “forced into a concave figure;” it resumes its shape on the withdrawal of the tap.

Third method :—A valve is attached by a spring to a plate which is pinned or screwed to the inside of the barrel head. The valve is raised by the insertion of the tap; otherwise it is kept closed by the spring; it is made to fit air and water-tight against its seat by means of a cover of leather or other suitable substance.

The front of the tap hole is closed by a metal disc, or by a plug attached by a chain to the barrel, or by a sliding plate.

[Printed, 1s. Drawings.]

A.D. 1866, May 9.—N° 1330.

MIDDLETON, SAMUEL.—“Improvements in the method and means of securing and discharging the contents of pipes and vessels.” One part of this invention relates to the manufacture of a tap, which may be put into the cork of a bottle. The bottle neck is to be roughened inside, so that when the cork is fixed the plug of the tap “will turn round without moving the cork.”

Another part “consists of india-rubber tubing to fit over the neck of the bottle so as to fit a vent peg, which might be placed in the top, and a contrivance in the shape of a button to serve as a screw.”

Another part consists “in covering a cork with leather, seamless or not.” A hole is pierced through the top of the cork and leather “about a quarter of an inch below the top of the cork,” and “a flat piece of tin or wire, or a leather strap riveted or sewed, or two eyelet holes,” are placed “so as to join the strap or band to reach unto the bottom.”

[Printed 4d. No Drawings.]

A.D. 1866, May 11.—N° 1357.

FRASER, HUGH.—(*Provisional protection only.*)—“Improvements in corking bottles, and in the machinery or apparatus

"connected therewith." The machine described is intended for "the preparing of corks, so that they may be more advantageously used for bottling." At one end of a form or table is placed a box containing corks. Across the machine a shaft extends moveable in bearings; at one end is a handle, and at the other a toothed wheel or segment is keyed, "which gears into a corresponding rack moveable in slides, situated above the wheel or segment." The end of the rack is made with "a semi-circular recess," and a similarly recessed piece of metal is fixed into the framing opposite to the rack. The recesses are "about the size necessary to compress an ordinary cork."

The workman "by drawing the handle or lever towards himself" compresses the cork, and a bottle being placed before him, he passes the compressed cork into it. A bracket at one side of the machine holds a vessel containing liquor "similar to that being bottled," and the workman dips the compressed cork into the liquor, "so that the cork may be more easily driven and caused to expand."

[Printed, 4d. No Drawings.]

A.D. 1866, May 18.—N° 1409.

MORAND, PETER JOSEPH.—"Improvements in infants' feeding bottles." The bottle is made "of a peculiar shape, with a turned up neck, so that, when filled with liquid and placed on a table, the liquid cannot escape unless drawn out, nor the bottle be toppled over." The tube is flexible; near one end is fixed a flexible capsule which is placed on the neck of the bottle, and to the other end is connected by a stud or other contrivance "a flexible ball or sphere and teat united permanently together." The ball and teat may be in separate pieces and held together by flanges or studs. "A flexible semi-spherical or other curved surface" may be substituted for the ball, the object being to obtain a "yielding surface resembling the human breast in softness, and at the same time to prevent the possibility of the teat being swallowed."

[Printed, 10d. Drawings.]

A.D. 1866, May 18.—N° 1412.

FOX, JOSEPH WESLEY.—(*A communication from William Trivet Fox.*)—(*Provisional protection only.*)—"An improved apparatus



"for containing and dispersing or scattering liquid scents and other liquids." The scent "is drawn up into and ejected through the stopper," which for this purpose is formed "with two channels or passages open at both ends." A tubular passage, having openings at or near the top and bottom, is fixed or formed in the bottle. "The upper passage in the stopper leads through from one part of it to another." The lower passage "opens into the upper at one end, and into the side or bottom of the stopper at the other end, in such position that when the stopper is turned in the neck of the vessel, the bottom end of such passage may be brought opposite to or over against the top opening of the tubular passage." The scent will be drawn up and blown out through the stopper "by blowing through the upper passage." Communication is cut off by turning the "blank surface" of the stopper "against the top of the tube." Sometimes an air-hole is made in the neck of the bottle, and the stopper is recessed at one part ; this hole is of course stopped or opened by turning the stopper accordingly.

[Printed, 4d. No Drawings.]

A.D. 1866, June 4.—N<sup>o</sup> 1549.

McFARLAND, COREY.—(*A communication from Charles Harris.*)—"Improvements in machinery for cutting corks and bungs." The framing is secured to a column, which also supports an adjustable table. The table is fixed on the top of a rod that slides in guides. On the rod is a rack which takes into a sector. The sector vibrates on a pin working in a socket in the lower guide and carrying a quadrant pulley which is connected by a chain to a treadle. A screw, extending from the lower end of the rod, working through an arm fixed on the column, and carrying check nuts, regulates the distance to which the table can be raised or lowered. On the table is a sliding plate provided with adjustable jaws ; the one is adjusted by set screws, the other by a "cam lever" pivoted to the plate and acted upon "by springs or weights."

A hollow vertical revolving shaft, "provided with a driving pulley," is supported in bearings on the frame ; it admits the lower end of a spindle which extends upwards and fits into the socket of a sliding bar ; thus the spindle both revolves and moves up and down. The lower end of the spindle is provided with a pin which passes through slots in the shaft and connects

the spindle with a collar that slides on the outside of the shaft ; this arrangement allows the spindle sufficient vertical motion " to force the cutters properly through the material." The upper end of the sliding bar passes through a socket "and is kept up by a spiral spring fitted in the said socket."

The cutters "are fitted in grooves formed in a cutter head" attached to the lower end of the revolving shaft. The grooves are formed "according to the desired shape of the corks or " bungs." The upper ends of the cutters are jointed or pinned to the sliding collar. A pin in the cutter head holds the material while being cut, and a spring on the pin removes the cut cork or bung from between the cutters.

A horizontal shaft works in bearings on the top of the framing ; the inner end carries a cam by which the sliding bar is pressed downward, the bar being provided with an adjustable friction roller for the cam to act on. The shaft carries also a "driving pulley, which runs loose thereon, except when in contact with a " friction clutch keyed fast upon the said shaft." The shaft "is fitted to slide endwise in its bearings to throw the friction clutch in and out of contact with the driving pulley;" this movement is obtained from the treadle.

The mechanism for working the horizontal shaft and connecting it to the treadle, the connection of all the other parts, and the operation of the machine, are explained at length in the specification.

[Printed, 10d. Drawing.]

A.D. 1866, June 7.—N<sup>o</sup> 1573. (\* \*)

NEWTON, WILLIAM EDWARD.—(*A communication from John Jay Squire.*)—"Improvements in jars for preserving fruits, meats, " and other substances." The first improvement is "constructing " jars for preserving fruits, meats, and other substances with " feet or pedestals on the bottoms thereof, so as to obtain a free " circulation of the heating medium beneath them when they are " placed in such medium in the process of putting them up." In this case three feet are shown equally distant from each other round the circumference, but their number may be increased.

The second, "holding the covers of jars in place by means of " elastic bands or straps or their equivalents." The cover rests upon a packing ring, and on the jars and their covers are pro-

jections mentioned under the fourth head, over and around which the elastic band is stretched, which draws the cover down and presses it upon the packing ring.

The third, "forming a basin on the upper surface of the cover" of preserve jars, and making a hole in the centre of the cover" in which "is fitted a cork or plug that can be taken out at pleasure," by which means a jar, the contents of which have been lessened, may be filled up.

The fourth, "forming lugs or hooks on the outside of preserve jars near their mouths, and forming projections or hooks on the tops of the covers in order to receive the elastic fastening straps" or bands which secure the covers in place."

[Printed, 8d. Drawing.]

A.D. 1866, July 11.—N° 1817.

THOMPSON, WILLIAM. — "Improvements in apparatus for filling and corking bottles." The apparatus for filling and corking may be combined or separate; it is described as combined.

A framing (mounted or not on wheels) consists of uprights and cross bars. Through the top cross bar passes a screw carrying a lever or wheel at top and a plate at bottom. The plate works in guides and has on its under surface a number of plugs which enter sockets fixed in a lower cross bar. The lower ends of the sockets are enlarged to fit the tops of bottle necks. The bottles stand on a platform adjustable in height by a screw turned by a wheel and working through the lower part of the framing.

The filling apparatus:—Two brackets are fixed to the front of the lower part of the framing, and thumbscrews supporting a plate pass through them. On the plate stands "a long closed rectangular chamber" divided into equal compartments, each having in front at bottom a tap. The levers of the taps are connected by a rod for simultaneous opening and shutting. Two pipes provided with taps (also connected by a rod) communicate with the cask containing the wine, &c., and with each compartment by means of branches. Each compartment is provided with an air-hole; and one compartment at one end has a "graduated glass gauge" for ascertaining the level of the liquid in each. A spirit level indicates the position of the chamber.

[Printed, 6d. Drawing.]

A.D. 1866, August 3.—N° 2007.

JOHNSON, JOHN HENRY.—(*A communication from Arthur Barbarin.*)—"Improvements in the mode of securing corks and " stoppers in the necks or mouths of bottles, jars, and other " vessels." The cap employed for securing the cork is a disc of india-rubber "having its border turned over and made thicker than " the middle portion." When the cork is in its place, the disc is stretched across it, and the border is then passed over the flange at the mouth of the bottle so as to "nip the neck" below the flange. The disc may be cemented to the top of the cork; it " may have more of a bag shape."

Or the cap may be an elastic ring having one or more strips of the same material fastened to it and passing from one side to the opposite one; the ring being slipped over the flange, the cross strips will necessarily pass over the cork and secure it.

[Printed, 8d. Drawing.]

A.D. 1866, August 14.—N° 2084. (\* \*)

BAXTER, CHARLES FRANCIS.—(*Provisional protection only.*) — Waterproofing and preserving various materials, including cork, by filling up the pores with paraffin.

[Printed, 4d. No Drawings.]

A.D. 1866, August 20.—N° 2134.

BATHOE, CHARLES.—(*Provisional protection only.*)—"An improved method of an apparatus for securing or protecting corks " or stoppers in bottles and other similar vessels." This invention provides means of securing corks in wine bottles "after the " corks have been withdrawn, a portion of the wine taken out, " and the cork again put into the bottle." A ring is slit to enable it to be opened out and pass round the neck; when shut " it is of smaller diameter than the rim of the neck." On each side of the slit is a lug with an opening through it, through which the staple of a padlock may pass. On to the ring, opposite the slit, is hinged a cap which can be brought over the cork; it is made with a hasp to pass over the lugs.

[Printed, 4d. No Drawings.]

A.D. 1866, September 14.—N° 2361.

BARANOWSKI, JEAN JOSEPH.—(*Provisional protection only.*) —"An improved apparatus or appliance to be used in conjunc-

"tion with corks for closing bottles, jars, and other similar receptacles." This appliance consists of "a plate or cap fitted on its under side with a screw not long enough to pass entirely through the cork," and a washer of elastic material "placed below the plate or cap and fitted over the screw." The cap and the washer must be "of sufficient diameter to cover the upper edge" of the neck of the bottle.

The cork is to be "cut off flush with the neck," and the screw is to be screwed into the cork until the washer is forced down upon the top of the cork and upon the neck.

Sometimes the screw is made separate from the cap, and the cap is pierced with a screwthread. The screw may carry a button or upper plate, having in it one or more apertures "to expose a disc placed below it, and bearing the name of the vendor or other desired designation."

[Printed, 4d. No Drawings.]

A.D. 1866, October 6.—N<sup>o</sup> 2572.

DENNIS, WILLIAM.—(*Provisional protection only.*)—"Improvements in the construction of bottles intended to contain malt liquors and other liquors, and in the mode of stoppering, unstoppering, and drawing off the contents thereof, the said stoppers being also applicable to bottles of the ordinary kind, and other vessels employed to contain liquids, fluids, and gases, either separately or in combination." The inventor forms "the body of the bottle as the frustum of a cone, the base being convex on the outside, and the apex communicating with a narrow circular chamber about three or four times larger in diameter than the hole in the apex." He makes "another and larger hole through the outside" of the chamber "opposite to the hole in the apex," and into these holes he inserts "a conical-shaped hollow stopper" of elastic material, the end of the stopper "being somewhat smaller than the hole in the apex" so as to leave "a clear annular space between the stopper" and "the hole in the apex for the passage of the liquid, and any sediment it may contain, into the aforesaid circular chamber." He fixes the stopper "air-tight to the outside of the bottle" by any suitable means.

To draw off the contents of a bottle thus constructed, he uses a tube "of nearly the same size as the hole in the apex" and "having a cutting blade fixed across the lower end thereof." He

pushes the tube through the stopper (thereby cutting a slit through the end of it), and so shuts off "the communication between the ale in the body of the bottle and the sediment in the circular chamber." By the foregoing arrangement he prevents or very considerably lessens "the clouding of the ale."

In wine or other bottles the stopper may be formed "as a cap to embrace the upper part of the neck," to which it may be secured by any convenient means.

He proposes to coat that part of the stopper which is in contact with the liquid "with liquid ebonite, elastic varnish, or other suitable composition."

He applies his stoppers (made with a slit through the bottom) to barrels containing beer and other liquors, in lieu of ordinary vent pegs. The air will pass through the slit as the contents are being drawn off, and the slit will afterwards close by the elasticity of the material of which the stopper is made.

[Printed, 4d. No Drawings.]

A.D. 1866, October 19.—N<sup>o</sup> 2706.

BROOMAN, CLINTON EDGCUMBE.—(*A communication from Victor Palyart.*)—"Improved pins, nails, or tacks, the application of the same to certain purposes, and an apparatus to be employed in inserting the same when fixed to caps or capsules into corks." These pins, termed "safety pins" by the patentee, are intended principally to be applied to capsules for the purpose of securing capsules to corks. They are made in various shapes, for example, "in the form of a lance, an arrow, or an anchor," and "round, triangular, or other desired shape in section;" their sides are more or less jagged. They are fixed to the under side of capsules "by soldering, riveting, or otherwise." The capsules may be formed on the under side "with a series of points or small pins, which enter the cork or fit round the neck."

These pins may also be attached to handles and be used as corkscrews.

The apparatus for inserting the pins (when fixed to capsules) into corks is of the following construction:—A bed is formed "with a vertical aperture" for the reception of a rod, which is secured to the bottom of the bed by a nut. On the upper portion of the rod is a sliding tube "enlarged at its upper end;" it is

borne upwards by a coiled spring and is guided in its slide by a feather. A vertical plate is carried up from one side of the bed, and on its upper part is a "horizontal semi-annular plate" adjustable to embrace the body of the bottle.

A capsule provided with a pin is placed in the tube, "the point" being uppermost; the neck of the bottle containing a cork is put into the enlarged top; the bottle is pushed down, and the pin will enter the cork.

[Printed, 10d. Drawings.]

A.D. 1866, October 26.—N° 2766.

MANUEL, ARMAND.—(*Provisional protection only.*)—"A new process of and apparatus for uncorking bottles" containing "gaseous and frothy liquids, and especially champagne." The instrument is attached to the bottle; it "is held by the wire" preferably below the neck of the bottle, and on turning it in "either direction it meets with resistance on the part of the wire, which soon breaks." The instrument is a lever of "serpentine" or sinuous form so as to give a better hold for the hand; its upper part is "doubled or folded over to form a loop" for the passage of the wire which holds down the cork.

Sometimes the instrument is made of a plate, say heart-shaped, "with a hole at the point or smallest portion of the heart for the passage of the wire below the bottle neck."

[Printed, 4d. No Drawings.]

A.D. 1866, November 1.—N° 2833.

BECKER, JULES.—"An improved apparatus for stoppering bottles," chiefly applicable "to bottles for containing gaseous liquids at a pressure greater than that of the atmosphere." The apparatus consists of (1) an ordinary cork cut off to about one-third of an inch above the mouth of the bottle; (2) an india-rubber washer above the cork; (3) a washer of cork, leather, or other substance, "forming an elastic cushion" above the india-rubber washer; (4) a small stamped metal plate or capsule on top of all. The cork washer may be dispensed with. The parts are secured "by means of hooks or wire, string, or other means commonly employed," and are tightened "by taking a bearing or support on the ring of the neck of the bottle."

Sometimes the parts are secured by "two half ferrules," which are united by passing a ring over them. Sometimes the india-rubber washer is changed for a ring; the capsule forms one piece with the "two portions of the two half ferrules;" and a wire is passed round the lower part of the arms of the ferrules and under the projecting part of the neck.

The patentee thus describes the appearance of his apparatus:—"The cork takes the form of the capsule, and the india-rubber, "bending over it, forms the joint between the metal of "the capsule, the surface of the cork, and the glass neck of the "bottle."

[Printed, 8d. Drawing.]

A.D. 1866, November 8.—N<sup>o</sup> 2906.

HEYWOOD, JOHN KAY.—(*Provisional protection only.*)—"Improvements in machinery and cutters for making bungs and "taps for barrels and other utensils." A hollow cutter block or cylinder of iron or other suitable material is fixed against the spindle or face plate of an ordinary lathe or upright drilling machine; "it is formed with a tail piece that fits into the driving "spindle" (the spindle being hollow), whilst the outer end projects sufficiently far for fixing thereto four cutters by means of screws. Inside the cutter block is placed a spring which rests against the bottom of the block, and on the upper side of the spring is fixed a spindle or mandrel, whose outer end "projects "to the front of the cutters." By this arrangement "the bung "or tap is delivered after being cut without stopping the "machine." The cutters are adjusted to suit any size of bung or tap "with iron packing or screws."

The cutters are made to revolve at a rapid pace; "an ordinary "cask shive" is pressed against the spindle which rests on the top of the spring, until it comes into contact with the cutters; "the bung or tap is rapidly cut out of the shive and afterwards "discharged from the cutter block by the recoil of the spring."

[Printed, 4d. No Drawings.]

A.D. 1866, November 16.—N<sup>o</sup> 3005.

DAVIES, GEORGE.—(*A communication from Pierre Labat and Bassdt, Brothers.*)—(*Provisional protection only.*)—"Improvements in the method of and apparatus for stoppering and



"closing vessels." This "system of stopping" applies to all kinds of bottles and jars, and to "vessels used in chemical or other experiments or operations, where a hermetically closed cover or joint is required;" it possesses the advantage "that the vessel may be opened or closed as often as may be required, and the cover will always remain as air-tight as at first."

The lower part of a metallic capsule has secured to it "by its edge a ring of india-rubber." The capsule is pierced in the middle with an air-hole, and the hole is closed by a mill-headed screw and a washer of india-rubber underneath the head.

The capsule (without the screw) is placed over the mouth of the vessel; the ring "bends up all round between the outside of the mouth and the inside" of the capsule; the air escapes through the hole, and the screw is then inserted and screwed up to the washer. "To remove the capsule it is only necessary to pull it upwards."

In closing the ends of cylindrical vessels used for chemical purposes, "wherein a tube passes through the hole in the centre of the cover," the screw is dispensed with; the cover "is furnished with a neck enclosing the tube," and the joint between the two "is closed by a short tube of india-rubber."

[Printed, 4d. No Drawings.]

A.D. 1866, November 29.—N° 3140.

PLUM, THOMAS WILLIAM.—(*Provisional protection only.*)—"Improvements in syphons for drawing off beer, wine, and other liquids from casks and other vessels." The syphon is made "partly or wholly of flexible tubing." The short or inserting leg is "made to float" by the use of corks, air tubes, &c. "upon or near the surface of the liquid to be drawn off." A valve opening inwards is placed at the outer end of the short leg, "so contrived that it will retain the liquid with which the syphon may have been charged" until the leg has been lowered into the liquid to be drawn off; the valve will then open and "permit the passage of the liquid."

[Printed, 4d. No Drawings.]

A.D. 1866, December 1.—N° 3162.

BATEMAN, HYDE.—"Improvements in corkscrews," whereby the cork is drawn from the bottle by "continuing to turn the screw

" in the same direction " as when inserting it. The corkscrew is made with an outer barrel or socket. The stem of the worm is cut with " a square threaded or other screw " and passes freely through a hole in the cross bar of the barrel. A thumb-nut with a cross handle and cut with a female screw fits on to the screw of the stem, and on the top of the nut is a moveable cover which when placed on the stem-screw prevents it from turning in the nut. The cover is to be placed on the screw when the worm is being thrust into the cork ; on removing the cover and continuing the turning the stem-screw will ascend through the nut and draw up the cork.

" To adapt the instrument to any sized bottle or even to draw " bungs from casks or jars " the barrel is made to consist of a cross bar and a pair of expanding legs, and to prevent the legs from slipping their lower ends are pointed.

[Printed, 8d. Drawing.]

A.D. 1866, December 7.—N<sup>o</sup> 3230.

MCGLASHAN, JOHN.—" An improved cap or cover to be applied for securing and labelling bottles." This invention consists in the application to the outer ends of the corks of bottles (especially such as contain aerated liquid) of metallic caps or labels, " on which grooves are formed for the passage or reception " of the wire by which the corks are held." By stamping these caps in dies suitably formed and engraved with " the name of " the manufacturer, together with the quality of the liquid contained in the bottles," the caps " can be produced to combine " the two functions of a label and a preserver for the head of the " cork." The caps are by preference made of tin ; they may be lackered or varnished with any colour.

[Printed, 8d. Drawing.]

A.D. 1866, December 8.—N<sup>o</sup> 3245.

STOCKER, ALEXANDER SOUTHWOOD.—" Improvements in the " manufacture of capsules applicable to bottles and other receptacles." These capsules are made by " moulding, turning, " or otherwise fashioning them " out of a plastic composition, the component parts of which are " glue, resin, oil, water, and " whiting, or such like or other suitable plastic or mouldable " material or materials." The capsules are lined " around the

"interior of their rims" with strips of sheet cork or other flexible substance which will cause them to fit tightly round the necks of bottles or other like receptacles. The bottles, &c., "must be provided with plain and flat rims."

The patentee states that letters patent were granted to him "on or about the 25th day of November, 1851," for improvements in the stoppering of bottles, and that in the specification are described "a metallic capsule and the proper shaped bottle, as far as regards configuration;" he adds, "upon reference thereto my meaning may be more clearly understood."

[Printed, 4d. No Drawings.]

A.D. 1866, December 19.—N<sup>o</sup> 3337. (\* \*)

PERRY, STEPHEN, and PERRY, JOSEPH JOHN.—"Improvements in inkstands or vessels used for containing and supplying ink." The patentees prefer making their inkstands and bottles of "glass or earthenware, or china, or of material not prejudicially acted on by ink."

Several modifications are described. The first consists of a reservoir, a dipping cup having a tube which descends nearly to the bottom of the reservoir, and a socket in which is fitted an elastic stopper, cylindrical on the exterior, having a flange at the top, and hollow inside "to render it sufficiently yielding to adapt itself to any irregularities in the socket." In the second, the dipping cup is arranged to pass through the stopper. In the third, the stopper, cup, and tube are moulded in one piece of vulcanized rubber. In the fourth, the tube is connected to the cup by means of vulcanized rubber, "so that its end may remain at the bottom of the ink reservoir notwithstanding the movement of the dipping cup;" or the tube may be omitted, and the rubber may be lengthened to supply its place. In the fifth, the inkstand acts "on the bird fountain principle." The stopper is inserted into an opening below the cup; it is cut away on one side, so that "by turning it round," or "by moving it a distance endways," the communication between the cup and the reservoir may be opened or closed.

The patentees also "combine hollow elastic stoppers with openings at the side" with bottles for storing ink. The bottle has a spout on one side of the neck and an air-hole at the other; the stopper "is cut away or perforated so as in one position to

"leave the passage free, and in another to close them liquid-tight." In another arrangement, a passage is formed through the stopper. The bottle may have a screw thread moulded on its neck, and the stopper a corresponding thread upon it and a "flexible delivery tube or nozzle." Corresponding air-holes must be made in the neck of the bottle and in the stopper.

[Printed, 8z. Drawing.]

A.D. 1866, December 20.—N° 3341.

GILBEY, WALTER.—"Improvements in the mode of treating bottle corks, especially for the purpose of obtaining a more distinctive and less easily effaceable mark or brand, and also for rendering the cork less liable to decay and the action of insects." To carry out the first part of this invention a smooth surface is given to that portion of the cork or bung which projects after insertion, by covering it "with a coating of any liquid composition suitable for that purpose." The coated surface is then printed, stamped, or embossed in one or more colours, with a trade mark, name, address, &c., &c. Sometimes the cork or bung (if the surface is smooth) has the name, &c., printed on it. Sometimes the whole or a portion of the cork or bung is painted or dyed, such colours being selected "as may be best suitable for effecting the object."

To preserve the exposed portions of cork "from the attacks of insects and from fungi," such portions are covered with "any of the well-known substances or mixtures" which are "destructive of insects and preventative of decay."

[Printed, 4z. No Drawings.]

A.D. 1866, December 31.—N° 3440.

PLUM, THOMAS WILLIAM.—"Improvements in apparatus for taking off liquids from casks and other vessels, and similar purposes." The patentee attaches a tube of wood, or gutta percha, or other suitable material (which he calls "a floating end") to taps, suction pipes, and siphons.

The outer end of the tube is caused "to float upon or towards the top of any liquid into which it may be inserted" either "by its own gravity" or by means of cork or of "air spaces in or around the tube." The tube is attached to the tap, &c. by a length of flexible tubing. By preference the tube is made of

light wood, and the air space by means of two pieces of cork "having the air space between them;" it may be provided or not with a metal strainer.

A tap for drawing liquids from casks is converted "into a syphon or syphon tap" by increasing the length "of the delivery tube or nozzle." The "stop or shut off" is made "at the lower end of the delivery tube" or "at a point low enough to retain a sufficient column of liquid for drawing in the manner of a syphon from the required depth below the horizontal line of the barrel of the tap."

The tube when used for siphon or suction pipe may be passed through a plug "with a flexible self-venting diaphragm."

In the provisional specification the patentee states that he fixes in the extreme end of the tube a valve opening inwards; and that in siphons "for drawing milk from under cream" he uses a flexible tube and inserts into the end of it "a tube of wood" or other material of length sufficient to stand in the milk pan "and allow the flexible tube to pass or lay over, clear of the contents, to the outside of the pan." He places a valve "at the suction end" of this siphon.

[Printed, 8d. Drawing.]

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## INDEX OF SUBJECT MATTER.

[The numbers refer to the pages in which the Abridgments commence.  
The names printed in *Italic* are those of the persons by whom the  
inventions have been communicated to the Applicants for Letters Patent.]

Adulteration of wine, &c.  
"while on draught," pre-  
venting :

Candler, 313.

Air from casks and similar  
vessels, excluding :

Bright, 59.  
Houssart and Houstoun, 95.  
Elliott, 133.  
Fanshawe, 172.  
Mott, 221.  
White, 231.  
Bourne, 272.

Blending and bottling at one  
operation :

Hayward, 255.

Bottle-stands combined with  
corkscrew :

Lund, 20.  
Sanders, 309.

Bottling :

Aerated liquids ;  
Berry, 22.  
Tayler, 26.  
Murdoch, 38.  
Mayo, 49.  
Masters, 59.  
Cowper, 65.  
Lanca, 68.  
Mondollot, 84.  
MacLean and Rae, 91.  
Knight, 157.  
Murray, 180.  
Johnson (*Mondollot*), 217.  
MacCallum, 223.  
Fleet, 232.

"Carbonated cod-liver oil ;"  
Murray, 180.

Non-aerated liquids ;  
Masterman, 10.  
Foole, 47.  
Mayo, 49.

Bottling—*cont.*

Mayo, 55.  
Hely and Norton, 57.  
Brooman, 61.  
Youil, 62.  
Browne, 87.  
Denis, 139.  
Clunes and Macintosh, 147.  
MacCallum, 223.  
Hayward, 255.  
Garton and Hill, 285.  
Thompson, 324.

Bung-holes and tap-holes, clos-  
ing :

Colyer, 265.  
Hutton, 319.

Bungs : *See also* Corks ; and  
Shives.

Fitting to casks ;  
Cockshutt, 100.  
Pitman, 164.  
Thompson, 258.

Instrument for removing ;  
Thompson, 258.

Metallic for churns ;  
Tinkler, 169.

With vent-holes and vent-pegs ;  
Maberly, 169.  
Taylor, 280.

Canisters and cans : *See* Cork-  
ing wide-mouthed vessels.

Caps and capsules :

Berry, 11.  
Brockedon, 24.  
Betts, 33.  
Rand, 34.  
Betts, 34.  
Betts, 35.  
Leroy, 41.  
Betts and Stocker, 41.  
Poole, 47.  
Burke, 48.

Caps and capsules—*cont.*

- Brockedon and Hancock, 54.  
 Betts and Jacob, 56.  
 Young, 58.  
 Betts, 61.  
 Stocker, 68.  
 Beltzung, 70.  
 Newton, 74.  
 Bellford, 70.  
 Jacob, 86.  
 Barlow, 98.  
 Stocker, 102.  
 Pinkney, 106.  
 Brooman, 110.  
 Scully and Heywood, 121.  
 Griffiths, 128.  
 Watson and Williams, 138.  
 Danne, 145.  
 Newton, 148.  
 Betts, 160.  
 Pearce, 161.  
 Munro, 163.  
 Betts, 166.  
 Johnson (*Masson*), 170.  
 Betts, 183.  
 Betts, 185.  
 Johnson (*Hartell and Kay*), 189.  
 Wilson, 190.  
 Chrimes, 193.  
 Jennings, 210.  
 Neale (*Barrauld*), 248.  
 Pickering, 254.  
 Betts, 261.  
 Thompson, 263.  
 Johnson (*Betts*), 274.  
 Lane, 286.  
 Fox, 300.  
 Betts, 302.  
 Rimmel, 303.  
 Johnson (*Lamoureux and Gendrot*), 319.  
 Johnson (*Harbarin*), 325.  
 Stocker, 331.  
 Colouring;  
   Betts, 316.  
 Machinery for making;  
   Betts, 34.  
   Beltzung, 70.  
   Newton, 74.  
   Jacob, 86.  
   Betts, 92.  
   Barlow, 98.  
   Brooman, 110.  
   Labat, 135.  
   Newton, 148.  
   Betts, 160.  
   Betts, 166.  
   Johnson (*Masson*), 170.  
   Betts, 183.  
   Betts, 185.  
   Johnson (*Hartell and Kay*), 189.  
   Wilson, 190.  
   Rimmel, 303.

Caps and capsules—*cont.*

- Materials for;  
   Betts, 61.  
   Brooman, 95.  
   Danne, 145.  
   Munro, 163.  
   Wilson, 190.  
   Jennings, 210.  
   Neale (*Barrauld*), 248.  
   Stocker, 331.  
 Securing to bottles;  
   Betts, 33.  
   Betts, 35.  
   Cowper, 65.  
   Fontainemoreau, 78.  
   Archer, 85.  
   Jacob, 86.  
   Betjemann, 89.  
   Archer, 90.  
   De Ste Marie, 97.  
   Ardouin, 123.  
   Griffiths, 128.  
   Scott, 143.  
   Brooman (*Chambiant*), 164.  
   Johnson (*Mathieu*), 201.  
   Jennings, 210.  
   Farrow, 218.  
   Betts, 248.  
   Betts, 261.  
   Neilson and Gillies, 273.  
 Securing to corks;  
   Brooman (*Palgar*), 327.  
 Serving as a "liquid measurer;"  
   Hine, 291.  
 Cork :  
   Cutting into lengths or strips;  
     Thomson, 8.  
     Parris, 69.  
     Seithen and Lichtenstein, 109.  
     Seithen, 116.  
     Chamberlain, 148.  
     Jones, 152.  
     Chamberlain, 180.  
     Crocker, 185.  
     Claeys, 192.  
     Henry (*Dalœrny*), 208.  
     Conroy, 239.  
     MacDowall, 295.  
     Johnson (*Hammer and Butz*), 310.  
   Cutting into quarters or squares;  
     Miller, 2.  
     Thomson, 8.  
     Lachenal and Vieyres, 29.  
     Parris, 69.  
     Seithen, 105.  
     Seithen and Lichtenstein, 109.  
     Seithen, 116.  
     Claeys, 122.  
     Howell, 140.  
     Chamberlain, 148.  
     Robinson, 154.  
     Chamberlain, 180.

**Cork—cont.**

- Clays, 192.
- Newton (*Millar*), 202.
- Henry (*Dalverny*), 203.
- Downing, 215.
- Conroy, 239.
- MacDowall, 295.
- Villette, 306.
- Johnson (*Hammer and Butz*), 310.
- Cutting into sheets or veneers ;
  - Crowley, 1.
  - Fontainemoreau, 53.
  - Seithen and Lichtenstein, 109.
  - Seithen, 116.
  - Seithen, 135.
- Cutting squares into "octagonal shape ;"
  - Chamberlain, 180.
- Preparing for making into corks ;
  - Miller, 2.
  - Carter, 8.
- Preparing for stuffing, buoyant articles, buffers, hats, &c.
  - Miller, 2.
  - Rowbotham and Lloyd, 12.
  - Bachelard, 27.
  - Rammell, 56.
  - Luis, 162.
  - Seithen, 182.
  - Porgie and Finn, 198.
  - Hart (*Zacharie*), 233.
  - Newton (*Cron dall*), 266.
- Removing "roughness and grittiness," &c., from ;
  - Moreau, 42.
  - Chamberlain, 180.
  - MacDowall, 295.
- Waterproofing ;
  - Baxter, 325.

**Cork-cutters, machinery for making :**

Redrup, 250.

**Cork-cutting tubes :**

Wilson, 111.

**Corking or stoppering bottles :**

**Containing aerated liquids**

- Berry, 11.
- Cooper, 15.
- Murdoch, 38.
- Poole, 44.
- Hely and Norton, 57.
- Fèvre, 66.
- Masters, 68.
- Glover, 77.
- Taylor, 92.
- Fontainemoreau, 101.
- Rogers, 115.
- De Baran, 197.
- MacCallum, 223.

**Corking, &c.—cont.**

- Bousfield (*Shaw*), 227.
- Johnson (*Hamilton*), 289.
- Becker, 328.
- Containing non-aerated liquids ;
  - Miller, 2.
  - Stegs, 6.
  - Berry, 11.
  - Cooper, 15.
  - Parker, 17.
  - Lawrence, 18.
  - Murdoch, 38.
  - Betts and Stocker, 41.
  - Poole, 44.
  - West, 45.
  - Cooper, 46.
  - Poole, 47.
  - Smith, 48.
  - Hely and Norton, 57.
  - Youil, 62.
  - Fèvre, 66.
  - Stocker, 68.
  - Masters, 68.
  - Newton, 74.
  - Blain, 76.
  - Bellford, 79.
  - Malinsau, 80.
  - Scott, 82.
  - Bellford, 83.
  - Ash, 83.
  - Mellish, 84.
  - Labat, 89.
  - Bradley, 91.
  - Fell and Cooke, 99.
  - Fontainemoreau, 101.
  - Stocker, 102.
  - Stansbury (*Arthur*), 103.
  - Pinkney, 106.
  - Gedge (*Bigolet*), 106.
  - Hills, Miles, and Monument, 113.
  - Crapelet, 113.
  - Bufnoir, 120.
  - Avery, 120.
  - Scully and Heywood, 121.
  - Ardouin, 123.
  - Scott, 124.
  - Clark and Austin, 127.
  - Enthoven, 127.
  - Barker and Toogood, 128.
  - Simpson, 131.
  - Cattaert, 132.
  - Roberts, 132.
  - Chalus, 133.
  - Labat, 135.
  - Roberts, 142.
  - Simpson, 142.
  - Millar, 143.
  - Scott, 143.
  - Borron, 144.
  - Gilbee, 156.
  - Nouveau, 162.
  - Powell, 163.
  - Brooman (*Chamblant*), 164.
  - Powell, 167.
  - Sharp, 171.
  - Luis (*Pourey*), 173.



Corking, &c.—*cont.*

Doulton, 173.  
 Rudkin, 184.  
 Chrimes, 193.  
 Bosselaers (*Vander-Hagen*), 193.  
 Cullis, 199.  
 Wilson, 200. •  
 Boquet, 207.  
 Saulay, 211.  
 Wilson, 212.  
 Clark (*D'Argy and Rieu*), 214.  
 Ridsdale, 218.  
 Jaques and Fanshawe, 219.  
 Walker, 220.  
 MacCallum, 223.  
 De Groote, 224.  
 Bousfield (*Shaw*), 227.  
 Clark (*Solon*), 228.  
 Thompson, 229.  
 Bate, 230.  
 Thompson, 237.  
 Thompson, 240.  
 Thompson, 244.  
 Thompson, 251.  
 Jennings and Lavater, 257.  
 Woodman, 268.  
 Chidley, 271.  
 Spiers and Pond (*Mallam*), 272.  
 Rogers and Scholfield, 290.  
 Chidley, 291.  
 Johnson (*Goodyear*), 292.  
 Johnson (*Lamoureux and Gendrot*), 319.  
 Davies (*Labat and Bassot*), 329.

Containing poisons;  
 Stevens and Fitch, 137.  
 Wilson, 200.  
 Bird, 226.  
 Thompson, 275.

"Without any air between the liquid and the cork;"  
 Denis, 139.

## Corking or stoppering "wide-mouthed vessels;"

Cooper, 46.  
 West, 52.  
 Young, 58.  
 Stocker, 68.  
 Beltzung, 70.  
 Malinau, 80.  
 Duncan, 81.  
 Scott, 82.  
 Jacob, 86.  
 Stocker, 102.  
 Stansbury (*Arthur*), 103.  
 Pinkney, 106.  
 Hills, Miles, and Monument, 113.  
 Tayler, 118.  
 Scully and Heywood, 121.  
 Scott, 124.

Corking, &c.—*cont.*

Clark and Austin, 127.  
 Enthoven, 127.  
 Barker and Toogood, 128.  
 Cattaert, 132.  
 Roberts, 132.  
 Labat, 135.  
 Stevens and Fitch, 137.  
 Roberts, 142.  
 Simpson, 142.  
 Borron, 144.  
 Quince, 158.  
 Northern, 159.  
 Pearce, 161.  
 Powell, 163.  
 Brooman (*Chambianf*), 167.  
 Powell, 167.  
 Doulton, 173.  
 Ollivier, 180.  
 Daft, 182.  
 Westwood, 189.  
 Chrimes, 193.  
 Bosselaers (*Vander-Hagen*), 193.  
 Boquet, 194.  
 Cullis, 199.  
 Brooman (*Farjon*), 201.  
 Boquet, 207.  
 Saulay, 211.  
 Chastonet, 214.  
 Pichery and Dansie, 227.  
 Bousfield (*Shaw*), 227.  
 Thompson, 237.  
 Thompson, 240.  
 Bossard (*Farjon*), 243.  
 Thompson, 244.  
 Thompson, 251.  
 Maschwitz (*Kraus*), 254.  
 Baxter, 255.  
 Jennings and Lavater, 257.  
 Thompson, 260.  
 Thompson, 267.  
 Woodman, 268.  
 Chidley, 271.  
 Thompson, 273.  
 Thompson, 276.  
 Dixon, 278.  
 Thompson, 282.  
 Bevan and Fleming, 283.  
 Thompson, 289.  
 Geyelin, 292.  
 Crowe, 294.  
 Hemming and Coyle, 311.  
 Johnson (*Lamoureux and Gendrot*), 319.  
 Newton (*Squire*), 323.  
 Johnson (*Barbarin*), 32.  
 Davies (*Labat and Bass*), 329.

## Corks, bungs, and stoppers

Cooper, 9.  
 Berry, 11.  
 Stocker, 36.  
 Desgranges, 46.  
 Cooper, 46.

orks, &c.—*cont.*

Stocker, 50.  
 Claeys and Strand, 56.  
 Young, 58.  
 Cowper, 65.  
 Fèvre, 66.  
 Stocker, 68.  
 Masters, 68.  
 Beltzung, 70.  
 Mathieu, 72.  
 Newton, 74.  
 Duncan, 81.  
 Scott, 82.  
 Ash, 83.  
 Bradley, 91.  
 Taylor, 92.  
 Jennings, 94.  
 Fell and Cooke, 99.  
 Cockshutt, 100.  
 Johnson (*Bordet*), 100.  
 Danks, 105.  
 Pinkney, 106.  
 Wilson, 111.  
 Neale and Dawson, 112.  
 Crapelet, 113.  
 Methvin, 114.  
 Rogers, 115.  
 Avery, 120.  
 Barker and Toogood, 128.  
 Millar, 143.  
 Edwards, 153.  
 Quince, 158.  
 Powell, 167.  
 Maberly, 169.  
 Trouttet, 177.  
 Rudkin, 184.  
 Mordan, 194.  
 Brooman (*Farjon*), 201.  
 Clark (*D'Argy and Rieu*), 214.  
 Jaques and Fanshawe, 219.  
 Bousfield (*Shaw*), 227.  
 Thompson, 229.  
 Thompson, 237.  
 Thompson, 240.  
 Bossard (*Farjon*), 243.  
 Thompson, 251.  
 Maschwitz (*Krauskopf*), 254.  
 Jennings and Lavater, 257.  
 Bonfield, 258.  
 Thompson, 260.  
 Chidley, 261.  
 Thompson, 263.  
 Thompson, 267.  
 Thompson, 273.  
 Thompson, 276.  
 Dixon, 278.  
 Thompson, 281.  
 Thompson, 282.  
 Johnson (*Goodyear*), 287.  
 Thompson, 289.  
 Ireland, 294.  
 Crowe, 294.  
 Garrett, 298.  
 Settle (*Matthews*), 299.  
 Johnson, (*Jacquasson*), 300.

Corks, &c.—*cont.*

Austin, 303.  
 Watkins, 304.  
 Read, 306.  
 Standish, 315.  
 Daubigny and Clegg (*Pécaut*), 318.  
 Dennis, 326.  
 Davies (*Labat and Bassot*), 329.  
 Coasting;  
 Castle, 270.  
 Gilbey, 333.  
 Compressing;  
 Miller, 2.  
 Denis, 139.  
 Maberly, 169.  
 Fraser, 320.  
 Labelling or stamping;  
 Clark, 308.  
 MacGlashan, 331.  
 Gilbey, 333.  
 Machinery for cutting;  
 Miller, 2.  
 Jones, 4.  
 Redmund, 7.  
 Thomson, 8.  
 Bass, 13.  
 Thomson, 16.  
 Larkin, 19.  
 Cutler and Hancock, 25.  
 Harvig and Moreau, 28.  
 Lachenal and Vieyres, 29.  
 Geeves, 32.  
 Moreau, 42.  
 Boissimon, 49.  
 Fontaineimoreau, 53.  
 Parris, 69.  
 Gilbee, 71.  
 Cousens, 75.  
 Cooke, 85.  
 Hopkins, 88.  
 Campbell, 93.  
 Quiquandon, 107.  
 Seithen and Lichtenstein, 109.  
 Seithen, 116.  
 Claeys, 122.  
 Blackstone, 129.  
 Howell, 130.  
 Seithen, 135.  
 Howell, 140.  
 Leffler, 146.  
 Chamberlain, 148.  
 Seithen, 150.  
 Newton, 151.  
 Jones, 152.  
 Newton, 154.  
 Robinson, 154.  
 Wood (*Cow and Millar*), 165.  
 Henry (*Dalverny and Thoussetier*), 168.  
 Redrup, 173.  
 Newton (*Conroy*), 175.  
 Henry (*Dalverny*), 178.]

Corks, &c.—*cont.*

Isham and Albertson, 179.  
 Chamberlain, 180.  
 Seithen, 182.  
 Crocker, 183.  
 Claeys, 192.  
 Gedge (*Belzon*), 196.  
 Cutcliffe (*Vaughan*), 198.  
 Newton (*Millar*), 202.  
 Newton (*Millar*), 204.  
 Price, 206.  
 Henry (*Dalverny*), 208.  
 Downing, 215.  
 Griffin, 222.  
 Breffit, 224.  
 Davies, 230.  
 Frankenstein (*Hubert*), 234.  
 Theyson, 235.  
 Conroy, 238.  
 Newton (*Goodspeed*), 245.  
 Clark (*Crocker*), 246.  
 Redrup, 250.  
 Davies (*Boris and Mackie*), 255.  
 Davies and Cate, 263.  
 Davies and Cate, 276.  
 Davies and Cate, 284.  
 Clark (*Perret*), 293.  
 MacDowall, 295.  
 Redrup, 297.  
 Villette, 306.  
 Johnson (*Hammer and Butz*), 310.  
 Cludera, 314.  
 Henry (*Sauvan*), 316.  
 Kennan, 317.  
 MacFarland (*Harris*), 322.  
 Heywood, 329.

## Of caoutchouc and other substances than cork only;

Brockedon, 21.  
 Brockedon, 31.  
 Hancock, 39.  
 Brockedon and Hancock, 54.  
 Masters, 59.  
 Newton, 63.  
 Johnson (*Bordet*), 100.  
 Danne, 145.  
 Rostaing, 187.  
 Walker, 220.  
 MacCallum, 223.  
 Bousfield (*Shaw*), 227.  
 Clark (*Abeilhau*), 237.  
 Jennings and Lavater, 257.  
 Bonfield, 258.  
 MacAdam, 269.  
 Longbottom, 301.  
 Thompson, 312.

## Preparing for bottling aerated liquids;

Murray, 180.  
 Stenhouse, 228.

## Securing in bottles containing aerated liquids;

Tyler, 26.  
 Stocker, 36.

Corks, &c.—*cont.*

Leroy, 41.  
 Masters, 59.  
 Cowper, 65.  
 Masters, 68.  
 Bauckham and Glover, 105.  
 Henry (*François*), 236.  
 Rogers and Scholfield, 290.  
 Gore, 305.  
 MacGlashan, 331.

## Securing in bottles containing non-aerated liquids;

Fletcher, 34.  
 Bewley and Owen, 40.  
 Leroy, 41.  
 Stocker, 50.  
 West, 52.  
 Masters, 59.  
 Stocker, 68.  
 Masters, 68.  
 James, 81.  
 Duncan, 81.  
 Scott, 82.  
 Bellford, 83.  
 Bauckham and Glover, 105.  
 Gedge (*Chevalier*), 115.  
 Bufnoir, 120.  
 Stevens and Fitch, 137.  
 How, 144.  
 Hinks and Nibbs, 146.  
 Williams and Ellison, 164.  
 Ollivier, 180.  
 Westwood, 189.  
 Miller and Struthers, 240.  
 Bevan and Fleming, 238.  
 Rogers and Scholfield, 290.  
 Brooman (*Bousignes*), 294.  
 Gore, 305.  
 Middleton, 320.  
 Johnson (*Barbarin*), 325.  
 Bathoe, 325.  
 Baranowski, 325.  
 MacGlashan, 331.

## Securing "temporarily";

Templemore, 279.

## Sizing or separating;

Ellis, 222.

## "Smoothing, finishing," &amp;c.

Downing, 215.

## "Square-headed";

Luis, 158.

## Corkscrews and instruments for drawing corks:

Henshall, 3.  
 Thomason, 4.  
 Lund, 20.  
 Osborne, 23.  
 Shrapnel, 24.  
 Stocker, 37.  
 Loach, 38.  
 Burke, 103.  
 Coney, 104.  
 Lund and Hipkins, 112.

**Corkscrews, &c.—cont.**

Newton, 134.  
 Denis, 139.  
 Davis, 159.  
 Maberly, 169.  
 Byrn, 191.  
 Johnston, 206.  
 Nicholls, 213.  
 Chinnock, 242.  
 Chinnock, 244.  
 Hull (*Bohm*), 271.  
 Dixon, 276.  
 Roper, 290.  
 Brooman (*Pályart*), 327.  
 Bateman, 330.

Attached to bottle-stands;  
 Lund, 20.  
 Sanders, 309.  
 "Avoidance of the use of";  
 Cartwright, 177.

**Covers of jugs, &c., opening:**

Ridgway, 157.  
 Thompson, 195.  
 Nadan, 259.  
 Robinson, 288.

**Decanting or drawing off:**

Aerated liquids;  
 Plinth, 5.  
 Grant, 6.  
 Berry, 22.  
 Poole, 44.  
 Cowper, 65.  
 Lance, 68.  
 Masters, 68.  
 Mathieu, 72.  
 Fontainemoreau, 101.  
 Rogers, 115.  
 Clark (*Olivier & Brissot*),  
 318.

**Non-aerated liquids;**

Plinth, 5.  
 Masters, 59.  
 Masters, 68.  
 Mathieu, 72.  
 Challinor, 78.  
 Duncan, 81.  
 Belford, 83.  
 Shaw, 97.  
 Fontainemoreau, 101.  
 Shaw, 114.  
 Scully and Heywood, 119.  
 Elliott, 133.  
 Ellis, 145.  
 Nouveau, 162.  
 Fanshawe, 172.  
 Clark (*Lézaré*), 241.  
 Gedge (*Laburthe*), 266.  
 Ellis and Adams, 278.  
 Taylor, 283.  
 Sibly, 297.  
 Candler, 313.  
 Middleton, 320.  
 Dennis, 326.

**Decanting, &c.—cont.**

Two or more liquids from one  
 vessel "producing effe-  
 vescence";  
 Brooman (*L'Hôte*), 161.

"Dividing wood into cylin-  
 ders" for stoppers;  
 Thompson, 314.

**Extracting corks and pieces of  
 cork from bottles:**

Procter, 262.  
 Haseltine (*Pastorius and  
 Jackson*), 296.

Extracting shives from casks:  
 Taylor, 280.

**Feeding-bottles, stoppering:—**

Scully and Heywood, 125.  
 Edwards, 153.  
 Knott, 153.  
 Tiernan, 200.  
 Lang, 211.  
 Wilson, 212.  
 Palmer, 213.  
 Perry, 226.  
 Dixon, 278.  
 Garrett, 298.  
 Botham, 301.  
 Morand, 321.

"Filling-up casks" and similar  
 vessels:

Tooth, 139.

**Funnels:**

Macinnes, 35.  
 Brooman, 61.  
 Burrington, 144.

**Grinding or sharpening cork-  
 cutters;**

Jones, 4.  
 Bass, 13.  
 Larkin, 19.  
 Harvig and Moreau, 28.  
 Geeves, 32.  
 Fontainemoreau, 53.  
 Gilbee, 71.  
 Selthen, 116.  
 Blackstone, 129.  
 Selthen, 150.  
 Redrup, 173.  
 Newton (*Conroy*), 175.  
 Claeys, 192.  
 Griffin, 222.  
 Davies, 230.  
 Frankenstein (*Hubert*), 234.  
 Theyson, 235.  
 Davies and Cate, 265.  
 Davies and Cate, 276.

# INDEX OF SUBJECT MATTER.

## Grinding, &c.—cont.

Davies and Cate, 284.  
Clark (*Perret*), 283.  
Henry (*Sawoon*), 316.

## Grinding or trimming ends of corks :

Setthen and Lichtenstein, 109.  
Claeys, 122.  
Wood (*Cox and Millar*), 165.  
Claeys, 192.  
MacDowall, 295.

## Grinding several stoppers at once :

Wisker, 15.

## Hollow corks or stoppers :

Breffit, 172.  
Breffit, 234.  
Frankenstein (*Hubert*), 324.  
Newton (*Goodspeed*), 245.  
Baxter, 255.  
Chidley, 261.

## Ink-holders and inkstands, stoppering :

Cooper, 9.  
Johnston, 13.  
Cooper, 15.  
Lawrence, 18.  
Stephens, 19.  
Dain, 26.  
Gauci and Bain, 28.  
Cooper, 46.  
Smith, 48.  
Blyth, 50.  
Mill, 51.  
Mitchell, 64.  
Perry, 73.  
Halkett, 82.  
Daft, 87.  
Taylor, 89.  
Taylor, 94.  
Mill, 96.  
Mordan, 99.  
Stansbury (*Arthur*), 103.  
Danks, 105.  
Pinkney, 106.  
Fontainemoreau, 107.  
Morrell, 116.  
Scully and Heywood, 119.  
Scully and Heywood, 121.  
Bain, 125.  
Scully and Heywood, 125.  
Clark and Austin, 127.  
Cattaert, 132.  
Robertson, 152.  
Johnson, 160.  
Langford, 183.  
Leuchars, 191.  
Bain, 195.  
Wilkins, 197.

## Inkholders, &c.—cont.

Ridsdale, 218.  
Jaques and Fanshawe, 219.  
Newton (*Close*), 225.  
Clark (*Solon*), 238.  
Welch, 242.  
Hicks, 254.  
Quelle, 259.  
Cooke, 282.  
Brewer (*Rittmeyer*), 285.  
Perry, 332.

## Jars : See Corking wide-mouthed vessels.

## Labelling corks :

Clark, 308.  
MacGlaahan, 331.  
Gilbey, 333.

## Scent-bottles :

Dispersing scent through stoppers ;  
Fox, 321.  
Stoppering ;  
Haseler, 80.  
Mellish, 84.  
Watson and Williams, 138.  
May, 283.  
Fox, 321.

## Sealing bottles :

Bünger, (*Kühmann*), 296.

## Shives, cutting :

Hopkins, 88.  
Redrup, 173.  
Claeys, 192.  
Price, 206.  
Price, 220.  
Redrup, 250.  
Taylor, 280.  
Redrup, 297.  
Cluderay, 314.

## Siphons :

Poole, 44.  
Lanoa, 66.  
Heathcote, 76.  
Fontainemoreau, 101.  
Wilson, 111.  
Gedge (*Ducignan*),  
Chimes and Macint  
Ridsdale, 187.  
Musselwhite, 188.  
Frankenstein (*Caz*  
Barker, 264.  
Devereux, 284.  
Levisohn, 304.  
Bore, 313.  
Plum, 330.  
Plum, 333.

phon-taps :

Masters, 59.  
Hurst, Horsey, and Baker,  
199.

Stopper apparatus for casks” :

Cockshutt, 100.

toppering : *See* Corking.

toppering bottles with two  
necks :

Berry, 183.

toppering water-plates :

Cooper, 46.

oppers : *See also* Bungs ;  
Corks ; and Shives.

Always “adherent to the neck” ;

Chalus, 133.

Mordan, 170.

Casting or moulding ;

Pinkney, 106.

For blacking-bottles ;

Mordan, 194.

For taps ;

Cooper, 15.

Parker, 17.

Loach, 38.

Cooper, 46.

Masters, 59.

Cattaert, 132.

Maberly, 169.

Hurst, Horsey, and Baker,  
199.

Woodman, 260.

Candler, 313.

“Moveable for gaseous liquids ;”

Trouttet, 177.

“Of stoneware or earthenware ;”

Northern, 159.

Doulton, 173.

Stoppers—*cont.*

Ornamenting ;  
Wilkinson, 229.

Vent-holes in casks :

Taylor, 280.

Vent-holes in vessels “from  
“which fluid is poured out  
“through tubular spouts :”

Edmonds, 288.

Vent-pegs and spiles :

Parker, 17.

Masters, 59.

Scully and Heywood, 125.

Redrup, 173.

Henry (*Daiveryn*), 208.

Redrup, 250.

Clark (*Laurens, Peret, and  
TrégoMAIN*), 253.

Trapnell, 253.

Taylor, 230.

Taylor, 283.

Bourne, 286.

Dennis, 328.

Screwed into bungs ;

Maberly, 169.

Waste cork and old corks, uti-  
lizing :

Bachelard, 27.

Quiquandon, 107.

Kilburn, 290.

Wire-cutters for champagne  
bottles, &c. :

Burke, 103.

Manuel, 328.

Wire-twisters for wiring corks :

Hart, 277.

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## V.

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## CONTENTS.

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3. A Commission directed to Sir Richard Wynne and others to inquire upon oath whether NICHOLAS PAGE or SIR NICHOLAS HALSE was the first inventor of certain kilnes for the drying of malt, &c. &c. (*Letters Patent, Nos. 83 and 85, respectively dated 8th April 1626, and 23rd July 1635.*) Price 2d.; by post, 2½d.
4. **DUD DUDLEY's Metallum Martis**; or iron made with pit-coale, sea-coale, &c. (*Letters Patent, Nos. 18 and 117, respectively dated 22nd February 1620, and 2nd May 1638.*) Price 8d.; by post, 9d.

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12. The letter of Master WILLIAM DRUMMOND for the construction of machines, weapons, and engines of war for attack or defence by land or sea, &c. Dated the 29th September 1626. (*Scotch Patent, temp. Car. II.*) Price 4d.

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If any Patentee should be desirous of exhibiting a model of his invention in London, he may avail himself of this Museum, which has been visited since its opening on the 22nd June 1857 by more than 2,800,000 persons. The model will be received either as a gift or loan; if deposited as a loan, it will be returned on demand. Before sending a model, it is requested that the size and description of it shall first be given to the Superintendent of the Patent Office Museum.

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All communications relating to the Patent Office, or to the Museum and Portrait Gallery, to be addressed to B. WOODCROFT, Clerk to the Commissioners of Patents and Superintendent of the Patent Office Museum, at the Patent Office, 25, Southampton Buildings, Chancery Lane, London, W.C.

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